

**BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS**

**IN THE MATTER OF THE APPLICATION OF
MIDWEST ENERGY, INC. FOR APPROVAL TO
MAKE CERTAIN CHANGES IN ITS
CHARGES FOR GAS SERVICE**

DOCKET NO. 06-MDWG-1027-RTS

DIRECT TESTIMONY OF

WILLIAM K. EDWARDS

**ON BEHALF OF
MIDWEST ENERGY, INC.**

1 **DIRECT TESTIMONY OF WILLIAM K. EDWARDS**

2

3 Q. What is your name and business address?

4

5 A. My name is William K. Edwards. My business address is 2201 Cooperative Way,
6 Herndon, Virginia 20171.

7

8 Q. By whom are you employed, and in what capacity?

9

10 A. I am employed by the National Rural Utilities Cooperative Finance Corporation
11 (CFC) as an economist and Vice President of Regulatory Affairs. In that capacity I
12 am responsible for the support of regulatory issues of cooperatives before the Federal
13 Energy Regulatory Commission (“FERC”) and many state commissions.

14

15 Q. What is your educational background and experience?

16

17 A. I received my BS degree in Business with a concentration in economics from
18 Christopher Newport College of the College of William & Mary in 1977, and a MA
19 degree in economics from Old Dominion University in 1979. My major fields of
20 study included mathematical economics, econometrics, and microeconomics. I have
21 completed a number of courses toward a Ph.D. in economics from the Virginia
22 Polytechnic Institute & State University. I have worked for the firm of Ernst & Ernst
23 (Ernst & Whinney) in its Washington Utility Group as a consultant principally in the

1 electric utility industry. From 1982 to 1985, I was employed by Mississippi Power &
2 Light Company (Entergy - Mississippi) as a supervisor responsible for rate research.
3 From January 1986 until early 1995, I was employed by Central Louisiana Electric
4 Company, Inc. as Manager of Rate Research and subsequently as Director of Rates.
5 In that capacity I was responsible for regulatory affairs, regulatory accounting, rate
6 design, cost of service studies, rate administration, and the attendant litigation
7 associated with regulatory issues before both the Louisiana Public Service
8 Commission, and the FERC. Since 1996, I have been employed by CFC. A more
9 comprehensive history of my experience is contained in Schedule 1.

10

11 Q. What is the purpose of your testimony?

12

13 A. The purpose of my testimony is to support the reasonableness of Midwest Energy
14 Inc's ("Midwest Energy" or "Company") proposed return on equity as well as the
15 reasonableness of certain underlying assumptions used in its estimate of the return on
16 equity. Specifically, to determine the reasonableness of a 46.09 percent equity ratio
17 target, the appropriateness of reaching that target equity ratio in five years, and the
18 reasonableness of a 20-year capital rotation cycle. Additionally, I have examined the
19 return on equity estimate made by the Company for its reasonableness when
20 compared to alternative formulas.

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THE ROLE OF CFC

Q. What is CFC?

A. The National Rural Utilities Cooperative Finance Corporation (CFC) was incorporated as a private, not-for-profit cooperative association under the laws of the District of Columbia in April 1969. The principal purpose of CFC is to provide its members with a dependable source of low cost capital and state-of-the-art financial products and services. CFC provides its members with a source of financing to supplement the loan programs of the Rural Utilities Service (RUS) of the United States Department of Agriculture, which is the successor agency of the Rural Electrification Administration (REA). CFC will also lend 100 percent of the loan requirement for those members electing not to borrow from RUS. CFC is owned by and makes loans primarily to its rural utility system members to enable them to acquire, construct and operate electric distribution, generation, transmission, and related facilities. CFC also provides guarantees on debt to its members for tax-exempt financings of pollution control facilities and other

1 properties constructed or acquired by its members, debt in connection with certain
2 leases and various other transactions.

3
4 CFC had 1,546 members as of May 31, 2005, including 899 utility members,
5 virtually all of which are consumer-owned cooperatives, 70 service members and 69
6 associate members. The utility members included 828 distribution systems and 71
7 generation and transmission ("power supply") systems operating in 49 states and
8 four U.S. territories.

9

10 Q. How does CFC obtain the funds its lends to cooperative utilities?

11

12 A. CFC functions as both a borrower and a lender. As a lender, CFC makes short,
13 medium, and long-term loans to its member systems. As security for its long-term
14 loans, CFC receives a first mortgage on its borrowers' facilities. These mortgages
15 and related mortgage notes are in turn used as security for CFC collateral trust bonds
16 issued in the public capital market. Through the sale of such bonds as well as
17 commercial paper and other debt instruments, CFC obtains capital on behalf of its
18 member borrowers. In this role CFC acts as a borrower.

19

1 CFC issues long-, medium-, and short-term debt in both the domestic and foreign
2 capital markets. CFC issues long-term secured collateral trust bonds for periods
3 of two years to 30 years, unsecured medium-term notes for periods of nine months
4 to 30 years, unsecured quarterly income capital securities for periods of up to 49
5 years and unsecured commercial paper for periods of one to 270 days and
6 extendable commercial notes with maturities up to 390 days. CFC also enters into
7 bank bid note arrangements with banks. CFC's collateral trust bonds, medium-
8 term notes, quarterly income capital securities and commercial paper all carry
9 investment grade ratings from three rating agencies (Standard & Poors, Moodys,
10 and Fitch).

11
12 CFC sells unsecured commercial paper and medium-term notes to its members.
13 Commercial paper is sold for periods of up to 270 days and medium-term notes are
14 sold for periods of nine months to 30 years. CFC sets rates for both securities daily.
15 In addition, members may invest in the daily liquidity program, which can be
16 withdrawn by the members on demand.

17

1 **THE GENERAL FINANCIAL CONDITION OF MIDWEST ENERGY**

2

3 Q. Is Midwest Energy a member of CFC?

4

5 A. Yes. Midwest Energy is a member of CFC and, on a consolidated basis, has long-
6 term loans of approximately \$140 million as of December 31, 2005. Midwest
7 Energy is not a borrower of funds from the RUS.

8

9 Q. In what ways does Midwest Energy differ from an investor owned utility?

10

11 A. The main difference between an investor owned utility and a cooperative is the form
12 of ownership and [typically] size. In an investor owned company, stockholders own
13 the equity of the utility and ratepayers (the customers) are not entitled to the benefits
14 (and burdens) of equity holders. The governance of investor owned utilities is
15 comprised of a Board of Directors separate from the customers of the utility.
16 Therefore, there is an implicit conflict of interests associated with investor owned
17 utilities; the interests of the equity owners are different from the interests of the
18 customers. In the past, vertically integrated electric utilities were regarded as
19 monopolies whose goal was to maximize profits to the stockholders at the expense

1 of their customers. As such, State and Federal government entities regulated the
2 rates of such utilities to reduce such behavior.

3
4 In a cooperative, the customers own the equity. Hence, the benefits (and burdens) of
5 being an equity holder belong to the customer. There are a number of benefits that
6 can accrue to customers of cooperative organizations that include non-profit tax-
7 exempt status, a return of excess margins, and [all things being equal] lower cost
8 electricity. In a cooperative, the Board of Directors is comprised of customers who
9 are democratically elected. As such, the conflict present with investor owned
10 utilities is not present with cooperative structures because the customers and equity
11 owners are the same. A rate increase filed with a state commission by a cooperative
12 has faced the scrutiny of the Board of Directors who are, themselves customers of
13 the cooperative and who have a fiduciary responsibility to represent the interests of
14 the equity owners.

15
16 Although aware of the differences, sometimes regulators forget that, as a result of
17 the cooperative structure, there is no incentive to maximize profits, or charge a
18 “profit” on sales to its members. Additionally, should customers of cooperatives
19 become convinced that a specific rate increase or other action is unnecessary,
20 unreasonable, or otherwise unduly prejudicial; they have as their remedy the ability

1 to democratically replace the Board of Directors and senior management. For these
2 reasons, many states elect not to rate regulate cooperatives. Indeed, I am informed
3 that KSA 66-104d provides that Kansas electric cooperatives organized under “The
4 Electric Cooperative Act” with fewer than 15,000 retail customers may, with
5 membership approval, exempt themselves from Kansas Corporation Commission
6 rate regulation. Although Midwest Energy is not organized under “The Electric
7 Cooperative Act,” and it has more than 45,000 retail electric customers, it is like
8 smaller cooperatives because: (1) it is operated on a non-profit basis; (2) it is owned
9 entirely by its customers; and (3) it has a democratically elected board of directors.

10

11 Q. What are CFC’s general loan policies?

12

13 A. For distribution utilities, CFC offers three basic types of loans. These are: (1) long-
14 term secured loans made concurrently with the RUS; (2) 100 percent CFC loans
15 made exclusively from CFC funds; and (3) short-term loans similar to a line of
16 credit. CFC offers long-term loans with maturities of up to 35 years, intermediate-term
17 loans with maturities of up to five years, and line of credit loans. Long-term and
18 intermediate-term loans are available at fixed or variable interest rates and line of credit
19 loans are available only at a variable interest rate. Long-term loans are generally
20 secured by a first mortgage lien on all assets and revenues of the borrower.

1 Intermediate-term loans may be secured or unsecured, and line of credit loans are
2 generally unsecured. On line of credit loans with a maturity of more than one year, the
3 outstanding balance is generally required to be paid down to zero for five consecutive
4 days during each year. CFC makes loans to borrowers on a concurrent basis with RUS
5 (generally 70 percent RUS/30 percent CFC).

6
7 CFC requires, as a minimum, a 1.35 modified debt service coverage ratio, and the
8 appropriate security. By contrast, the RUS requires the minimum coverage ratios for
9 distribution borrowers a TIER of 1.25, DSC of 1.25, operating TIER of 1.1, and
10 operating DSC of 1.1. (7 CFR 1710.114).

11
12 It is important for the Commission to understand that these requirements are
13 minimum default requirements and values that approach the minimum default
14 requirements will not likely qualify a cooperative for future loans. If many systems
15 operated close to these minimums, CFC may not have the ability to raise new capital
16 in the financial markets.

17
18 Q. What are some of the specific criteria that creditors like CFC use to evaluate the
19 credit worthiness of cooperative utilities like Midwest Energy?

20

1 A. With the onset of electric deregulation in the mid-1990s as well as other more subtle
2 changes to the utility industry, CFC has re-evaluated its lending policies in an
3 attempt to better manage its portfolio. The revisiting of lending policies is a
4 continuing process that challenges CFC in its efforts to provide low cost capital to its
5 members. Although the credit decisions relating to specific applicants are “fact
6 specific” decisions, there are company specific criteria that are considered by CFC
7 prior to it issuing credit.

8
9 In evaluating the credit quality of cooperative utilities, CFC continues to focus on
10 several key factors: management, rates, generation and distribution facilities,
11 regulation, demographics, financial performance, and legal provisions.

12
13 With respect to financial evaluations CFC has devised a list of key financial ratios
14 that it uses to supplement its credit decisions. The “Key Ratio Trend Analysis”
15 (“KRTA”) provides a generalized and quick method for credit analysts to
16 preliminarily evaluate a cooperative. The KRTA, reviews of audit reports,
17 evaluations of prospective financial models and their underlying assumptions, and
18 discussions with management regarding financial performance form the basis of
19 CFC’s evaluation.

20

1 Tables 1-3 illustrate that the gas component of Midwest Energy is becoming
2 financially distressed. Except for 2003, when the last new rates went into effect, the
3 gas division's TIER, and MDSC ratios and the total Company's equity ratios (as a
4 percent of capitalization) are generally below that of cooperatives taken as a whole as
5 well as the median values for the cooperatives in the State of Kansas (see Tables 1-3
6 below). Although the 2005 cooperative data is unavailable for comparison purposes
7 at this time, it can be seen that Midwest Energy's TIER and MDSC ratios have fallen
8 substantially during the test year.

9 Table 1
10 TIER Coverage Ratios Comparisons

11	12	13	14	15	16	17
<u>Year</u>	Midwest Energy	Median of	Median of			
	<u>Gas</u>	<u>U.S. Co-ops</u>	<u>KS Co-ops</u>			
14	(0.13)	2.30	2.56			
15	2.91	2.28	2.20			
16	2.28	2.33	2.26			
17	0.40	NA	NA			

20 Table 2
21 MDSC Coverage Ratios Comparisons

22	23	24	25	26	27	28
<u>Year</u>	Midwest Energy	Median of	Median of			
	<u>Gas</u>	<u>U.S. Co-ops</u>	<u>KS Co-ops</u>			
25	1.10	2.02	2.12			
26	2.47	2.01	2.13			
27	1.96	1.92	2.18			
28	0.91	NA	NA			

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Table 3
Equity as a Percent of Total Capitalization

<u>Year</u>	<u>Midwest Energy Total Company</u>	<u>Median of U.S. Co-ops</u>	<u>Median of KS Co-ops</u>
2002	35.95%	48.73%	53.09%
2003	35.70%	48.60%	52.12%
2004	36.29%	48.20%	51.34%
2005	39.51%	NA	NA

I am advised by the Company that a portion of the increase in the equity ratio in 2005 relates to “other comprehensive income” (OCI) that was booked from its subsidiary, Midwest United Energy, and is expected to reverse in future periods. The remaining equity growth is primarily due to electric operations and, due to continued decline in gas margins, this growth will eventually reverse without adequate rate relief.

Overall, these ratios are moving in a direction whereby it may be difficult for CFC, or any other commercial lender(s), to lend funds to Midwest Energy. Alternatively, commercial lenders may attempt to mitigate such high-risk positions by charging a higher interest rate to compensate them for the perceived risks associated with Midwest Energy absent adequate rate relief. The equity ratio and coverage ratios are appreciably below the median levels of either the broader industry, or other Kansas cooperatives.

1 Q. Please explain the importance to a cooperative of developing and maintaining an
2 adequate equity ratio.

3

4 A. It is vitally important that cooperatives maintain an adequate equity ratio. The cost of
5 equity increases as the equity ratio decreases. Additionally, as a utility's equity ratio
6 declines significantly, it will tend to experience an increase in the cost of debt to
7 compensate lenders for the increased risk. Hence, there is a direct correlation
8 between financial risk and the cost of debt. Midwest Energy may be approaching
9 this point. In an attempt to remedy this situation, Midwest Energy is requesting an
10 equity adder allowing it to increase its equity ratio to a reasonable level. If granted,
11 the rate will be higher during the period when the equity ratio is growing from its
12 present level to its target. Additionally, CFC will consider the action of the
13 Commission in this docket carefully. If Midwest Energy cannot increase its equity
14 ratio and return to a reasonable financial condition, CFC will make subsequent credit
15 decisions accordingly, which may include higher priced CFC debt or restricted
16 access to debt.

17

18 Q. Is equity an important consideration in securing private source capital?

19

1 A. Yes. CFC attempts to work closely with all its borrowers to assist them in building
2 and maintaining an appropriate equity level in order to achieve a capital structure
3 that will allow them to attract private capital. CFC presently makes (and historically
4 has made) recommendations and provides courses designed to manage equity for
5 cooperative personnel in order to continue to have access to reasonably priced
6 private capital.

7

8 Q. Does CFC have an interest in the amount of equity that Midwest Energy maintains?

9

10 A. Yes. For the reasons I have previously identified, CFC is vitally interested in
11 Midwest Energy's capitalization as well as every other cooperative that seeks
12 financing from CFC. This interest is on an individual as well as a collective basis
13 since the overall position of the borrowers as a group is what CFC proffers to the
14 market. On a collective basis, the industry's equity ratios affect the attitudes of
15 investors of CFC securities. Should the overall equity position of cooperative
16 utilities change, investors can be expected to react toward CFC securities, as they
17 would towards the securities of an investor owned utility. If the overall equity ratio
18 of cooperatives declines, the investors would perceive an increase in risk and would
19 demand a higher risk premium associated with the cost of debt.

20

1 **ASSUMPTIONS AFFECTING THE RETURN ON EQUITY**

2

3 Q. How Does Midwest Energy's equity ratio compare to other cooperatives?

4

5 A. I am advised by the Company that its 2005 equity ratio as a percentage of
6 capitalization is approximately 39.51 percent. In the year 2004, the last reporting year
7 where information is available, the median equity ratio for cooperatives in the United
8 States is 48.20 percent (based on a population of 818 distribution cooperatives). In
9 Kansas, the median value is slightly higher at 51.34 percent (based on a population of
10 27 cooperatives). Hence, Midwest Energy's equity ratio is appreciably below these
11 median levels (869 – 1,183 basis points). The equity ratio should be permitted to
12 grow toward either the national average or the Kansas average at a reasonable pace.

13

14 Q. In its return on equity calculation, Midwest Energy assumes a target equity ratio of
15 46.09 percent. Is this target equity ratio reasonable?

16

17 A. Yes. I am advised by the Company that this target equity level of capitalization is the
18 equivalent to the target equity level of total assets of 40 percent included in their
19 corporate policies and approved by their board of directors. Although the target ratio
20 is 211 basis points below the national average and 525 basis points below the Kansas

1 average, it is a conservative target equity ratio, and should be viewed in terms of a
2 range as opposed to a point estimate.

3

4 Q. How is a “fair rate of return” on equity and debt determined?

5

6 A. The return on equity is more difficult to determine than debt costs, and is particularly
7 more difficult when applied to a cooperative. Equity capital, like any resource, has a
8 cost associated with its usage. In a cooperative, the cost of equity is determined by
9 the growth in plant and the patronage capital rotation plan more than it is in an
10 investor owned utility where equity capital is exposed to factors such as capital
11 market risks and the competing returns available from other investment alternatives.
12 But like an investor owned utility, the cost of equity cannot be directly measured, it
13 therefore must be estimated by analyzing information concerning the patronage
14 capital rotation policy, the future growth in plant, and the current and prospective
15 equity target ratios.

16

17 The distribution customers who own Midwest Energy invested equity capital in the
18 form of patronage capital in the company. This capital investment continues when
19 Midwest Energy retains margins at the end of the year. The equity holder’s patronage
20 capital investments may be jeopardized when Midwest Energy loses money or only

1 meets its minimum payment obligations and the equity portion of the balance sheet is
2 reduced or impaired. Consistent with the regulatory and economic standards
3 identified in the Bluefield (1923) and Hope (1944) decisions, I believe the return
4 should be sufficient to return past capital investment in the utility, enable the
5 company to attract new capital, and maintain the company's financial integrity.
6 Absent an adequate return on capital, Midwest Energy and its customer owners are
7 harmed.

8
9 The Bluefield and Hope decisions, as applied to cooperatives, are slightly different
10 than when applied to investor owned utilities. In the investor owned utility, common
11 equity is traded in very competitive markets largely to investors who are not
12 customers of the utility. Therefore, with respect to investor owned utilities, a return is
13 required commensurate with the opportunity cost and risk of equity in the financial
14 market. With respect to cooperatives, because they do not trade equity in the market
15 but retain margins for a period of time before returning them to the owner customers,
16 the conceptual return should be adequate enough to allow Midwest Energy the
17 opportunity to meet its operating requirements, provide for access to the debt capital
18 markets and enable Midwest Energy to return the patronage capital pursuant to a
19 reasonable schedule.

20

1 Q. Why should a distribution cooperative like Midwest Energy be entitled to an equity
2 return? Isn't Midwest Energy a non-profit cooperative?

3

4 A. Midwest Energy is a non-profit tax exempt cooperative. As such, Midwest Energy
5 provides service to its members at rates that are essentially at costs. However, equity
6 capital has a cost associated with its rotation and Midwest Energy's growth and the
7 determination of that cost becomes the basis of the return on equity recommendation
8 contained in the company's request.

9

10 Q. Are there different methods to estimate the return on equity for a cooperative like
11 Midwest Energy?

12

13 A. There are several formulas useful for determining the cost of equity capital from a
14 cooperative like Midwest Energy. These formulas have been developed over the last
15 30 plus years. Much of the original work in this field is attributable to Mr. James W.
16 Goodwin during the late 1960s and early 1970s. Mr. Goodwin worked for the REA
17 as chief of the REA Retail Rate Branch and wrote several papers on the subject of
18 equity costs associated with cooperatives. The formula Mr. Goodwin developed was
19 generated from the equity side of a standard revenue requirements calculation as
20 shown below and in Exhibit ___ WKE-1 Schedule 3.

1

2 Eq(1): $K_e = [(1+g)^n - (1-g)^{n-1}] / (1+g)^{n-1} - 1$

3

4

Where:

5

K_e = Return On Equity

6

g = Growth Rate in Rate Base

7

n = Patronage Capital Rotation Period

8

9

Subsequent work by both the RUS (formerly the REA) and CFC has resulted in a

10

modification to the original formula to reflect a forward-looking analysis. The

11

modified formula is shown as equation 2 below.

12

13 Eq(2): $K_e = [(1+g)^{n+1} - (1-g)^n] / (1+g)^n - 1$

14

15

These formulas produce a minimum return required to hold the equity ratio at its

16

present level while growing at a fixed level of growth (g) and revolving capital credits

17

at a specific cycle (n years). It also implicitly assumes a retirement of patronage

18

capital schedule that grows as margins grow over time. However, should the equity

19

ratio be appreciably below (above) its target level, then either the “Goodwin” model

20

or its successor (the modified “Goodwin” model) will not produce a return that will

21

allow the cooperative to achieve its target level.

22

1 The model the company is using permits adjustments to the cost of equity that will
2 permit it to achieve the target ratio in a fixed number of years. I am informed that the
3 Commission has used this model before when analyzing the return on equity of
4 distribution cooperatives. Because the equity ratio is appreciably below the target
5 equity ratio, the adjustment component in the company's model will produce an
6 increase in the return on equity (ROE) to permit the cooperative a higher return than it
7 would ordinarily require. This is necessary to protect the existing equity of the
8 members who may further lose their equity and the customer owners of Midwest
9 Energy would be subject to higher financing costs if the return on equity did not
10 permit such a premium. Hence, the Company used a return model as shown in
11 equation 3 below in an effort to protect and return equity capital.

12

13 Eq(3):
$$K_e = g + (1/n) + ((1+g) * (((We^*/We)^{(1/t)} - 1))$$

14

15

Where:

16

K_e = Require Return On Equity

17

g = Anticipated Growth Rate In Plant

18

n = Patronage Capital Rotation Period

19

We^* = The Target Equity Ratio

20

We = The Actual Equity Ratio

21

t = Target Number Of Years To Reach We^*

22

23 Another model, which has been used by the Commission (Caney Valley Electric

24 Cooperative Association Docket No. 121,082-U), is predicated upon the modified

1 “Goodwin” model, but contains an adjustment mechanism for equity ratios identical
2 to equation 2 above and can be used as a check for the ROE calculation for the
3 estimate of ROE made by the Company. This model is shown below in equation 4.

4

5 Eq(4):
$$Ke = \left[\frac{((1+g)^{n+1} - (1+g)^n)}{((1+g)^n - 1)} \right]$$

6
$$+ [(1+g) * ((We^*/We)^{(1/t)} - 1)]$$

7

8 The underlying difference between equations 3 and 4 is that equation 3 implicitly
9 assumes a levelized return of patronage capital whereas equation 4 assumes patronage
10 capital is retired as margins grow.

11

12 For the purposes of my review, I have relied on both equations 3 and 4 in my analysis.
13 However, I recommend equation 3, which the Commission has used before with
14 Midwest Energy.

15

16 Q. The Company has provided estimates of growth rates, which it relies on in
17 developing its recommendations for ROE. Are these growth rates reasonable?

18

19 A. The company uses a 5.22 percent growth rate for its gas properties (see
20 Exhibit ___ WKE-1 Schedule 2). These growth rates represent the expected growth

1 rates from 2006 through 2010. The growth rates (and subsequent ROEs) should be
2 set on a forward-looking basis because it is the basis upon which rates will be set,
3 and is the basis upon which patronage capital will be refunded to the equity owners
4 of Midwest Energy. Additionally, the estimates of growth rates must be sustainable.
5 Should Midwest Energy expect a one or two year growth of seven percent when the
6 long-term sustainable growth rate was appreciably below seven percent, the resulting
7 ROE and rates would over-collect the required return. In a cooperative, this type of
8 error is partially mitigated by the fact that revenues in excess of costs are ultimately
9 refunded to the equity owners. However, customers are still deprived of the
10 opportunity cost of their capital while the cooperative has it. Alternatively, a growth
11 rate that is too low jeopardizes the efforts of the cooperative to return the patronage
12 capital.

13
14 The future growth rates are lower than the historical growth rates (see
15 Exhibit ___WKE-1, Schedule 2, page 1 of 2). However, the variance among the
16 growth rates is greater in the historical data, thereby undermining the value of the
17 historical average in that comparison.

18
19 Q. Is the Company's assumption of achieving a 46.09 percent equity ratio in five years
20 reasonable?

1

2 A. I believe that it is. The problem with determining whether it is reasonable to achieve
3 the target equity ratio in five years is whether it achieves a balance between meeting
4 the target unnecessarily quickly thereby causing the ROE to be excessive, or
5 achieving the target equity ratio too slowly and risk other events (e.g. inflation,
6 business conditions, etc.) that may prevent the Company from ever reaching its
7 target. An eight-year time period whereby Midwest Energy achieves its target of
8 46.09 percent equity ratio is, to me, excessive given the immediate past history of the
9 Company because it may exceed the expected life of the proposed rates resulting in
10 the concern that the company may never reach its target equity ratio. Alternatively, a
11 two-year target to achieve a 46.09 percent equity ratio would cause an excessive
12 increase in the ROE of approximately 513 basis points using the company's ROE
13 methodology.

14

15 Q. The methodology that the Company used assumes, as an input, a patronage capital
16 rotation cycle of 20 years. Is a 20-year rotation cycle consistent with the industry?

17

18 A. Yes. Although CFC does not collect data on patronage capital rotation cycles, we are
19 aware of the cycle used by many cooperatives. It is my experience that the majority
20 of rotation cycles extend in range from 15 to 23 years. Some rotation cycles are

1 longer, and some are shorter; however, the median value will likely be between 15
2 and 20 years. As an example, CFC's rotation cycle extends for 15 years. Therefore,
3 I believe that a rotation cycle of 20 years is reasonable based on the performance of
4 other cooperatives.

5

6 Q. Are the Company's return on equity results reasonable given the input assumptions
7 you have discussed?

8

9 A. The results of the Company's analysis are shown below in Table 4 for the reader's
10 convenience.

11

Table 4
Base Case Return on Equity
For Midwest Energy By Model

12

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20

	<u>Gas</u>
Company Proposed Model	13.51%
Adj. Modified "Goodwin" Model	<u>11.47%</u>
Difference	2.04%

21

22 Q. Why are there differences between the Company's proposed ROE model and the
23 adjusted modified "Goodwin" model?

24

1 A. As indicated before, the different models represent subtle differences in the
2 underlying assumptions regarding the return on equity required to return patronage
3 capital. The Company's model assumes a levelized approach to the return of
4 patronage capital. The adjusted modified "Goodwin" model assumes that patronage
5 capital is retired proportionate to the growth in margins. Both are correct given the
6 assumptions upon which they rely.

7

8 The adjusted modified "Goodwin" model was not included herein to suggest an
9 alternative return. It is included in my testimony to test the reasonableness of the
10 Company's estimate of return on equity. I believe that the use of this alternative
11 model supports the Company's conclusions as to its return on equity for its gas
12 operations.

13

14 Q. Is the Company's estimated return on equity reasonable?

15

16 A. Yes. The Company's approach is reasonable and the resulting estimates of the return
17 on equity for its gas assets are reasonable. Additionally, it is important that the
18 Commission conceptually recognize that Midwest Energy should be permitted to
19 claim the proposed equity premium associated with the Company's estimate of the

1 ROEs for its gas assets as shown below in Table 5 if patronage capital is to be
2 returned to the customer owners of Midwest Energy.

3 Table 5
4 Base Case Return on Equity
5 For Midwest Energy By Component
6

	Gas
7	
8	
9 Company Proposed Model:	
10 Return Without Equity Ratio Adj.	10.22%
11 Equity Ratio Adj.	<u>3.29%</u>
12 Total Required Return (K_e)	13.51%
13	

14 I had considered a range of growth rates extending from 4.39 percent to 6.04 percent
15 in the ROE calculation. I had also considered a range of equity ratio targets
16 extending from 45.00 percent to 51.04 percent (approximately the median value plus
17 or minus 3.2 percent). The assumptions given the high and low range as well as the
18 ROE estimates are shown below in Table 6.

19
20 Table 6
21 Development of the ROE Reasonable Range
22

	Low	High
<u>Component</u>	<u>Value</u>	<u>Value</u>
23		
24		
25 Growth Rate	4.39%	6.04%
26 Equity Ratio	45.00%	51.40%
27 Resulting ROE	12.14%	16.77%
28		
29		

1 Therefore, I believe a reasonable range of ROEs for Midwest Energy's gas operations
2 may extend from 12.14 percent to 16.62 percent. The Company's proposed ROE of
3 13.51 percent is 94 basis points below the midpoint (14.45 percent) of this range.

4

5 Q. Are there known impediments to achieving a fair rate of return?

6

7 A. Yes. Aside from determining a fair rate of return, Midwest Energy is proposing
8 Normalized Volume Rider (NVR) that provides a mechanism that will either collect
9 or refund differences from the normalized test year volumetric delivery revenue as
10 described in Mr. Volker's direct testimony. Under the present practice, traditionally
11 volatile commodity prices, departures from normal weather, or other factors affecting
12 prices or consumption may cause differences from the test year revenue and may
13 cause the company to appreciably under-collect or over-collect the allowed return.
14 In order to stabilize this effect and guarantee that Midwest Energy's members-
15 owners neither overpay nor underpay this expense, an NVR type adjustment would
16 be helpful.

17

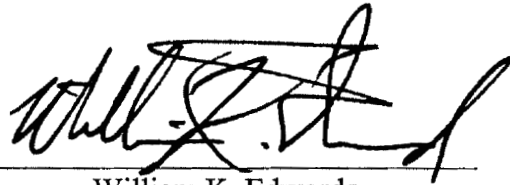
18 Q. Does this conclude your testimony at this time?

19

20 A. Yes.

State of Virginia)
Fairfax County)

William K. Edwards, being duly sworn, deposes and says that the statements contained in the foregoing prepared testimony and the exhibits attached hereto are true and correct to the best of his knowledge, information and belief, and that such prepared testimony constitutes his sworn testimony in this proceeding.



William K. Edwards

SWORN TO AND ASCRIBED BEFORE ME THIS THE 17 DAY OF
March A.D., 2006.



Notary Public

My Commission Expires:

12/31/07

WILLIAM K. EDWARDS

Mr. Edwards is the Vice President of Regulatory Affairs at the National Rural Utilities Cooperative Finance Corporation. Mr. Edwards' primary focus is the public utility industry. His areas of expertise include regulation, load forecasting, planning, cost and rate design, and mergers & acquisitions. Mr. Edwards has previously worked for the firm of Ernst & Whinney as a consultant, Mississippi Power & Light Company an operating company of Entergy as a supervisor in the Rate Department, Central Louisiana Electric Company as Director of Rates & Regulation, and Air Liquide America Corporation as an Energy Manager.

PROFESSIONAL EXPERIENCE

Mr. Edwards has extensive experience in the above listed areas. Representative projects are listed below for each of these areas.

Regulation. Mr. Edwards has broad and extensive experience in regulatory matters both as a consultant and as a utility executive. As Director of Rates for Central Louisiana Electric Company, Mr. Edwards had the responsibility for planning and successful execution of a number of dockets before both the Louisiana Commission and the FERC. Such experience includes, but is not limited to the following projects.

- Indiana Power & Light Rate Design Efforts Before the Indiana Commission
- ISES 1 & 2 rate proceedings before the Mississippi Public Service Commission
- Grand Gulf Rate proceeding before the Mississippi Public Service Commission
- Dolet Hills rate proceeding before the Louisiana Public Service Commission
- Wholesale rate proceeding before the FERC on behalf of Mississippi Power & Light Company
- Wholesale rate proceeding before the FERC on behalf of Central Louisiana Electric Company
- Transmission rate proceeding before the FERC on behalf of Central Louisiana Electric Company
- Antitrust case before the FERC on behalf of Central Louisiana Electric Company
- Rate complaint before the FERC involving rate of return and cost support.

Load Forecasting. Mr. Edwards has been involved in many load forecasting efforts with the utility industry and has participated in the industry debates regarding the evolution of methodologies for forecasting. Some of the companies Mr. Edwards has been involved with include the following.

- Wisconsin Public Service Commission - A review of the forecasting methodologies of the Wisconsin Utilities
- Delmarva Power & Light - Advance Plan Proceedings before the Delaware Commission
- Entergy - Forecasting Committee
- Central Louisiana Electric Company - Development of an econometric load forecast 1985-1995

- Aluminum Association of America - electric end-use and econometric approaches to load forecasting.

Planning. Mr. Edwards has extensive knowledge and experience with production costing models (e.g. PROMOD and POWRSYM) and load flow models (PTI and Westinghouse).

- Entergy - determination of fuel savings attributable to load and unit changes
- Central Louisiana Electric Company:
 - Fuel Budgets,
 - Analysis of Savings from Joint Dispatching,
 - Generation Planning
 - Rate Studies, and
 - Loss Studies.

Cost & Rate Design. Mr. Edwards has had extensive experience with cost analysis/determination and rate design for a number of companies including:

- Northern Indiana Public Service Company
- Delmarva Power & Light
- Arkansas Power & Light
- Mississippi Power & Light
- Louisiana Power & Light
- New Orleans Public Service Company
- Missouri Public Service Company
- Iowa Public Service Company
- Wisconsin Public Service Company
- Empire District Power Company
- New York State Gas & Electric Company
- Iowa Power & Light Company
- Allegheny Power System
- Central Louisiana Electric Company
- Air Liquide America Corporation

Mergers & Acquisitions. Mr. Edwards has performed a number of merger & acquisitions studies for various clients including:

- Central Louisiana Electric Company
- MidWest Energy
- Acquisition of Montana Power Company's hydroelectric facilities

TESTIMONY

Mr. Edwards has testified before the following Commissions on a broad range of topics:

<u>Company</u>	<u>Jurisdiction</u>	<u>Subject</u>
NIPSCO	Indiana	Long-Run Marginal Cost
IP&L	Indiana	Long-Run Marginal Cost
MP&L	Mississippi	Econometric Forecasts
MP&L	FERC	Financial Model/Rate of Return
CLECO	Louisiana	Rate Design/Revenue Recovery
CLECO	Louisiana	FASB 106 Issues
CLECO	Louisiana	Securities Issuances

CLECO	Louisiana	Securities Issuances
CLECO	Louisiana	Securities Issuances
CLECO	FERC	Cost of Service/Rate of Return
CLECO	FERC	Cost of Service/Rate of Return
CLECO	FERC	Cost of Service /Rate of Return
CLECO	FERC	Antitrust Issues (Predatory Pricing)
Air Liquide	Washington	Restructuring
Air Liquide	Texas	Restructuring
Air Liquide	Arizona	Rates/Corporate Structure
Air Liquide	Louisiana	Short-Run Marginal Costs and Non-Firm Rates
Idaho Co-ops	Idaho	Restructuring
Central Elect Co-op	Montana	Antitrust
Arizona Elect Power	Arizona	Stranded Costs
Montana Co-ops	Montana	Restructuring
Four County Elect	North Carolina Superior Court	Monopolization
CFC/Deseret G&T	FERC	Cost of Service/Rate of Return
Wayne-White	FERC	Market Power
Navopache EMC	Arizona	Rate of Return/TIER
Midwest Energy	Kansas	Rate of Return
Vermont Electric	Vermont	Financing/Rate of Return
Arizona Elect Power	Arizona	Rate of Return
S.W. Transmission	Arizona	Rate of Return
Wayne-White	FERC	Cost of Service
Big Horn	Wyoming	Rate of Return

Mr. Edwards has testified before the Idaho Legislature regarding electric utility restructuring and before the Transition Advisory Committee of the Montana Legislature regarding restructuring of electric distribution companies.

EDUCATION

Mr. Edwards holds a B.S. degree in Economics from Christopher Newport College of the College of William & Mary (with distinction) and a M.A. degree from Old Dominion University in Economics. Mr. Edwards' fields of concentration include econometrics, mathematical economics, and microeconomics. Mr. Edwards has completed the majority of requirements for the Ph.D. degree in economics at Virginia Polytechnic Institute & State University.

PUBLICATIONS AND PRESENTATIONS

Mr. Edwards has published or has spoken at the following industry conferences:

- Equity Management And The Ratemaking Process: An Overview of Theory and Practice, June 2004.
- "Restructuring At The Crossroads: The Wake of SMD", CFC Forum Meeting with Sue Kelly, Esq., and Rich Meyer, Esq., June 2003
- "The SMD NOPR: A policy At War With Itself?" CFC Independent Borrowers Meeting, in conjunction with John T. Stough and Rodney L. Nefsky, November 2002.

- "The SMD NOPR And Its Potential Effect On Cooperatives: It's Not Your Father's Electric Power Industry Anymore", GE's MAPS User's Conference, October 24, 2002.
- "Ratemaking In A Time Of Restructuring", CFC Forum, In conjunction with Carl Stover, July 2001.
- "PURPA: An Old Law With New Twists", Montana Electric Cooperative Manager's Meeting, June 2001.
- "FERC & Distribution Cooperatives", Tri-State Office Managers & Accountants Meeting, Sponsored by the South Dakota Rural Electric Association, Inc. August 24, 2000.
"Inferences of Restructuring On The Electric Utility Industry", Association of Illinois Cooperatives, Springfield, Illinois, July 2000.
"Strategic Planning And Recent Changes In FERC Policy Regarding The Regulation Of Cooperatives", Comments before the Arkansas Electric Cooperative Corporation, Little Rock, Arkansas, December 1999.
- "Cooperative Regulatory Issues at the FERC", National Rural Utilities Cooperative Finance Corporation Forum in New York, New York, 1999.
- "Changes In Regulatory Jurisdiction Resulting From Restructuring", Montana Association of Electric Cooperatives, June 1999.
- "Regulatory Restructuring and Economies of Scale & Scope", Montana Association of Electric Cooperatives, June 1998.
- "Role of Antitrust Laws in the Restructuring Process", Kentucky Association of Electric Cooperatives, September 1997.
- "FERC Regulation of Cooperatives", National Rural Utilities Cooperative Finance Corporation Seminars in Denver, Washington, and Atlanta February/March 1997.
- "FERC Regulation: Services & Financial Solutions, Proceedings from CFC Borrowers Interim Meetings", In conjunction with John T. Stough, Jr. Esq., N. Beth Emery, Esq., Geoffrey Hobday, Esq., March 1997.
"The Essentials of FERC Regulation of Cooperatives", In conjunction with N. Beth Emery, Esq. And Daniel E. Frank, Esq. On behalf of the National Rural Utilities Cooperative Finance Corporation, February 1997.
- "Unresolved FERC Rate Making Issues", National Rural Utilities Cooperative Finance Corporation Independent Borrowers Conference, July 2, 1997.
- "Major Issues Facing the Electric Utility Industry As A Result of Restructuring", Texas Cooperative Accounting Association, June 1997.
- "FERC's New Merger Policy", National Rural Utilities Cooperative Finance Corporation, March 1997.
- "Acquisitions and the Future of Electric Distribution Cooperatives", Presentation Before the Indiana Statewide Association of Electric Cooperatives, August, 1996.
- "The Economics of Acquisitions, Presentation Before the National Rural Electric Cooperative Association, June 1996.
- "Comments Regarding Electric Industry Restructuring", on behalf of Air Liquide America Corporation for the FERC 1995.
- "Non-Firm Industrial Rates: Economic Justification Vs Marketing Justification", Presentation Before the Southeastern Electric Exchange, April 1992.
- "Econometric Elasticity Measures Using Directly Estimated Differential Equations", Presentation Before the Southeastern Electric Exchange, October 1989.
- "Role of Marginal Costs in the Rate Making Process", Entergy Rate Conference, June 1984.
- "An Inverse Limit Theorem to the Core of the Economy", Old Dominion University Thesis for the Degree of Master of Arts in Economics, Summer 1979.

PROFESSIONAL AFFILIATIONS

Mr. Edwards is a member of the American Economic Association (AEA), and the American Law and Economics Society. In 1993, Mr. Edwards served as chairman of the Southeastern Electric Exchange's Rate Section. Mr. Edwards has additionally been a member of the Edison Electric Institute's Rate Committee.

Midwest Energy
Review of Gas Growth Assumptions

	(a)	(b)	(c)	(d)
Line No.	Year	Electric Net Plant	Percentage Change	Notes
1	2010	\$44,555,274	4.82%	Projected
2	2009	\$42,504,558	4.96%	Projected
3	2008	\$40,496,929	5.25%	Projected
4	2007	\$38,477,352	5.07%	Projected
5	2006	\$36,622,145	6.00%	Projected
6	2005	\$34,550,246	3.42%	Actual
7	2004	\$33,409,135	6.35%	Actual
8	2003	\$31,415,197	10.86%	Actual
9	2002	\$28,337,659	25.02%	Actual
10	2001	\$22,667,320	-4.36%	Actual
11	2000	\$23,700,157	4.39%	Actual
12	1999	\$22,703,510	19.96%	Actual
13	1998	\$18,925,442	24.12%	Actual
14	Historical Growth (1998-2005)		11.22%	
15	Historical Standard Deviation		10.05%	
16	Est. Future Growth (2002-2004)		5.22%	
17	Future Est. Standard Deviation		0.41%	

Midwest Energy Results Of Return Formulas
 For Gas

Line No.	Parameter	Variable Name	Parameter Value
1	Growth Rate	g	5.22%
2	Current Equity Level	We	39.51%
3	Target Equity Level	We*	46.09%
4	Time to Reach Target Equity (yrs)	t	5
5	Cap. Credits Rotation Cycle (yrs)	n	20

Company Sponsored Return Model w/o Equity Ratio Adjuster:

6 $Ke = g + (1/n) =$ 10.22%

Company Sponsored Return Model:

7 $Ke = g + (1/n) + ((1+g) * ((We*/We)^{(1/t)} - 1)) =$ 13.51%

Modified "Goodwin" Model:

8 $Ke = ((1+g)^{(n+1)} - (1+g)^n) / ((1+g)^n - 1) =$ 8.17%

Modified "Goodwin" Model with Equity Ratio Adjuster:

9 $Ke = [((1+g)^{(n+1)} - (1+g)^n) / ((1+g)^n - 1]$
 10 $+ [(1+g) * ((We*/We)^{(1/t)} - 1)] =$ 11.47%