LARGE FILING SEPERATOR SHEET

CASE NUMBER: 07-589-GA-AIR
07-590-GA-ALT
07-591-GA-AAM

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TESTIMONY

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VIA OVERNIGHT MAIL

July 31, 2007

The Public Utilities Commission of Ohio
Docketing - 13th Floor
180 East Broad Street
Columbus, Ohio 43255-0573

Re: In the Matter of the Application of Duke Energy Ohio, Inc. for an Increase in Gas Rates, Case No. 07-589-GA-AIR

In the Matter of the Application of Duke Energy Ohio, Inc. for Approval of an Alternative Rate Plan for its Gas Distribution Service, Case No. 07-590-GA-ALT

In the Matter of the Application of Duke Energy Ohio, Inc. for Approval to Change Accounting Methods, Case No. 07-591-GA-AAM

Dear Sir or Madam:

Enclosed please find an original and 20 copies of Duke Energy Ohio, Inc.'s Direct Testimony in the above-referenced cases.

Please date-stamp and return the two extra copies of this letter in the enclosed self-addressed envelope.

Should you have any questions, please feel free to call me at (513) 287-3601.

Thank you.

Sincerely,

John J. Finnigan, Jr.
Associate General Counsel

JJF/sew

cc: All counsel of record (w/encl.)

www.duke-energy.com

FILE

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In The Matter of the Application of Duke Energy Ohio, Inc. for an Increase in Gas Rates	))))	Case No. 07-589-GA-AIR
In the Matter of the Application of Duke Energy Ohio, Inc. for Approval of an Alternative Rate Plan for its Gas Distribution Service	)))))	Case No. 07-590-GA-ALT
In the Matter of the Application of Duke Energy Ohio, Inc. for Approval to Change Accounting Methods	)))	Case No. 07-591-GA-AAM

DUKE ENERGY, OHIO, INC.

DIRECT TESTIMONY

THE PUBLIC UTILITIES COMMISSION OF OHIO

In The Matter of the Application of Duke Energy Ohio, Inc. for an Increase in Gas Rates	))))	Case No. 07-589-GA-AIR
In the Matter of the Application of Duke Energy Ohio, Inc. for Approval of an Alternative Rate Plan for its Gas Distribution Service	)))))	Case No. 07-590-GA-ALT
In the Matter of the Application of Duke Energy Ohio, Inc. for Approval to Change Accounting Methods	))))	Case No. 07-591-GA-AAM

DIRECT TESTIMONY OF

KEITH G. BUTLER

ON BEHALF OF

DUKE ENERGY OHIO, INC.

_____ Management policies, practices, and organization

___x__ Operating income

___x__ Rate Base

_____ Allocations

_____ Rate of return

_____ Rates and tariffs

_____ Other

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In The Matter of the Application of	)	
Duke Energy Ohio, Inc. for an	)	Case No. 07-589-GA-AIR
Increase in Gas Rates	)	
	)	
In the Matter of the Application of	)	
Duke Energy Ohio, Inc. for Approval	)	Case No. 07-590-GA-ALT
of an Alternative Rate Plan for its	)	
Gas Distribution Service	)	
	)	
In the Matter of the Application of	)	
Duke Energy Ohio, Inc. for Approval	)	Case No. 07-591-GA-AAM
to Change Accounting Methods	)	

DIRECT TESTIMONY OF

KEITH G. BUTLER

ON BEHALF OF

DUKE ENERGY OHIO, INC.

<u>**INDEX**</u>

Testimony discussing income tax expense.

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I. INTRODUCTION AND PURPOSE

1   **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2   A. My name is Keith G. Butler, and my business address is 400 South Tryon Street,

3   Charlotte, North Carolina 28285.

4   **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

5   A. I am employed by the Duke Energy Corporation ("Duke Energy") affiliated

6   companies as Senior Vice President Tax.

7   **Q. PLEASE SUMMARIZE YOUR EDUCATION AND PROFESSIONAL**

8   **QUALIFICATIONS.**

9   A. I have a Bachelor of Science degree in Business Administration, with a

10   concentration in accounting, from the University of North Carolina at Chapel Hill.

11   I am a Certified Public Accountant in the State of North Carolina, a member of

12   the American Institute of Certified Public Accountants, a member of the North

13   Carolina Association of Certified Public Accountants and a member of the Tax

14   Executives Institute.

15   **Q. PLEASE SUMMARIZE YOUR WORK EXPERIENCE.**

16   A. I joined Duke Energy in January 1984 in the Controller's Department and have

17   worked in various leadership positions in accounting, finance, independent power

18   development and energy services. I was appointed to the position of Vice

19   President & Corporate Controller in August 2001 and was responsible for the

20   accounting functions of Duke Energy. In June 2005, I was appointed to the

21   position of Vice President Corporate Tax. I was appointed Senior Vice President

22   Tax effective January 1, 2007.

211337

1   **Q. PLEASE DESCRIBE YOUR DUTIES AS SENIOR VICE PRESIDENT**

2   **TAX.**

3   A.   As Senior Vice President Tax, I have overall responsibility for corporate tax

4   compliance, planning, and accounting for Duke Energy. The Duke Energy Tax

5   Department prepares and files federal, state and local income, sales and use,

6   excise, and property tax returns for Duke Energy. We also file tax returns for

7   various joint ventures if Duke Energy is the designated tax matters partner.

8   The Tax Department maintains and reconciles Duke Energy's tax accounts

9   and manages audits with the Internal Revenue Service and state and local tax

10   authorities. Finally, the Tax Department is responsible for the reporting and

11   disclosure of tax related matters, to the extent required.

12   **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**

13   **PROCEEDING?**

14   A.   My testimony addresses Duke Energy Ohio's ("DE-Ohio") income tax expense

15   presented in this filing. I sponsor Schedules C-4 and C-4.1 and Supplemental

16   Filing Requirements (C)(10) and (C)(16). I also provided certain tax information

17   to other witnesses for their use in preparing this case.

II. SCHEDULES, FILING REQUIREMENTS AND INFORMATION SPONSORED BY WITNESS

18   **Q. PLEASE DESCRIBE SCHEDULE C-4.**

19   A.   Schedule C-4 provides the adjusted jurisdictional federal income tax expense for

20   DE-Ohio.

21   **Q. PLEASE DESCRIBE SCHEDULE C-4.1.**

1 A. Schedule C-4.1 presents the jurisdictional federal income tax expense for DE-

2 Ohio prior to adjustments.

3 Q. **PLEASE DESCRIBE SUPPLEMENTAL FILING REQUIREMENT**

4 **(C)(10).**

5 A. Supplemental Filing Requirement (C)(10) is the latest certificate of valuation

6 from the Ohio Department of Taxation.

7 Q. **PLEASE DESCRIBE SUPPLEMENTAL FILING REQUIREMENT**

8 **(C)(16).**

9 A. Supplemental Filing Requirement (C)(16) provides information relating to the

10 Company's federal income tax expense. The Company's gas operations are

11 subject to Ohio Excise Tax and therefore are not subject to state income tax.

12 Q. **PLEASE DESCRIBE THE TAX INFORMATION YOU PROVIDED TO**

13 **OTHER WITNESSES FOR THEIR USE IN PREPARING THIS CASE.**

14 A. I provided certain accumulated deferred income tax and accumulated deferred

15 investment tax credit information to Mr. Don Wathen for his use in preparing

16 Schedule B-6. In addition, I provided Mr. Wathen with the average Ohio gas

17 property tax rate for 2007 for his use in calculating the annualized property tax

18 expense on DE-Ohio's net plant as of March 31, 2007, which is the valuation date

19 in this proceeding. I also provided Mr. Stephen De May with the accumulated

20 deferred income tax and accumulated deferred investment tax credit balances for

21 use on Schedules D-1A and D-1B.

III. CONCLUSION

1 Q. WERE SCHEDULES C-4 AND C-4.1, SUPPLEMENTAL FILING

2   REQUIREMENTS (C)(10) AND (C)(16), AND THE TAX INFORMATION

3   YOU SUPPLIED TO OTHER WITNESSES PREPARED UNDER YOUR

4   DIRECTION AND SUPERVISION?

5 A. Yes.

6 Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?

7 A. Yes.

211337

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DIRECT TESTIMONY OF

CARL J. COUNCIL, JR.

ON BEHALF OF

DUKE ENERGY OHIO, INC.

_____ Management policies, practices, and organization

_____ Operating income

___x___ Rate Base

_____ Allocations

_____ Rate of return

_____ Rates and tariffs

_____ Other

210935

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In The Matter of the Application of Duke Energy Ohio, Inc. for an Increase in Gas Rates	))))	Case No. 07-589-GA-AIR
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DIRECT TESTIMONY OF

CARL J. COUNCIL, JR.

ON BEHALF OF

DUKE ENERGY OHIO, INC.

INDEX

Testimony relating to plant in service.

TABLE OF CONTENTS

I. INTRODUCTION AND PURPOSE

1 Q. **PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is Carl J. Council, Jr. and my business address is 526 South Church

3 Street, Charlotte, North Carolina 28202-1803.

4 Q. **BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

5 A. I am employed by the Duke Energy Corporation ("Duke Energy") affiliated

6 companies as Director, Asset Accounting.

7 Q. **PLEASE SUMMARIZE YOUR EDUCATION AND PROFESSIONAL**

8 **QUALIFICATIONS.**

9 A. I am a graduate of the University of North Carolina at Charlotte with a Bachelor

10 of Science degree in Accounting. I am a Certified Public Accountant and a

11 member of the American Institute of Certified Public Accountants. I am also a

12 member of the Edison Electric Institute Property Accounting and Valuation

13 Committee.

14 Q. **PLEASE SUMMARIZE YOUR WORK EXPERIENCE.**

15 A. I began my employment with Duke Energy in the Controller's Department in 1982

16 as a Financial and Accounting Assistant. In 1989, I moved to the Internal Audit

17 Department as an Internal Auditor. In 1992, I moved to the Treasury Department

18 as an assistant to the Treasurer. I became a Financial Analyst in the Corporate

19 Finance Department in 1994, and a Senior Financial Analyst in 1997, specializing

20 in economic analysis/business unit valuation, cost of capital calculations and

21 issues, and capital markets issuances. In 1999, I moved to the Rates & Regulatory

22 Affairs Department as Manager, Regulatory Accounting, focusing on affiliate

1 code of conduct and electric restructuring issues, as well as the monthly and

2 annual fuel clause reporting. In 2001, I was named Director, Asset Accounting

3 for Duke Power. In 2006, I assumed my current position as Director, Asset

4 Accounting for the Duke Energy U.S. Franchised Electric & Gas Commercial

5 Business Unit.

6 Q. **PLEASE DESCRIBE YOUR DUTIES AS DIRECTOR, ASSET**

7 **ACCOUNTING.**

8 A. As Director, Asset Accounting, I have responsibility for the accounting activities

9 within the Company's U.S. Franchised Electric & Gas Commercial Business Unit

10 related to fixed assets, including depreciation and nuclear decommissioning,

11 materials and supplies inventory, fuel, including both inventory and payment of

12 fuel invoices, emission allowances, and joint owner billings for fixed assets.

13 Q. **WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**

14 **PROCEEDING?**

15 A. I am responsible for net plant in service and construction work in progress

16 contained in rate base and other plant-related items. I sponsor the following

17 Schedules: B-2, B-2.1, B-2.2, B-2.3, B-2.4, B-2.5, B-3, B-3.1, B-3.2, B-3.3, B-3.4,

18 B-4, B-4.1, B-4.2, and B-6.2, page 1 of Schedule D-5A and Schedule D-5B and

19 Supplemental Filing Requirements (C)(15), (C)(18), (C)(19), (C)(20), (C)(21),

20 (C)(22) and (C)(24). These schedules and filing requirements were prepared

21 under my direction and supervision or subject to my review.

II. SCHEDULES AND FILING REQUIREMENTS
SPONSORED BY WITNESS

22 Q. **PLEASE DESCRIBE THE INFORMATION CONTAINED IN THE**

1 **SCHEDULES OF SECTION B THAT YOU SPONSOR.**

2 A. The schedules of Section B that I sponsor develop the Jurisdictional Net Plant In

3 Service. The schedules are based on the Company's property records as of March

4 31, 2007, the date certain in this proceeding.

5 Q. **PLEASE DESCRIBE SCHEDULE B-2.**

6 A. Schedule B-2 shows the investment in gas plant in service including allocated

7 common plant by major property grouping as of the date certain, March 31, 2007.

8 The amount shown in the column labeled "Adjusted Jurisdiction" represents plant

9 in service that is used and useful in providing gas service to the Company's

10 jurisdictional customers.

11 Q. **PLEASE DESCRIBE SCHEDULE B-2-1.**

12 A. Schedule B-2.1 consists of a further breakdown of Schedule B-2 by the FERC and

13 Company Account for each major property grouping. The plant investment shown

14 in the column labeled "Adjusted Jurisdiction" represents plant in service that is

15 used and useful in providing gas service to the Company's jurisdictional

16 customers.

17 Q. **PLEASE DESCRIBE SCHEDULE B-2.2.**

18 A. Schedule B-2.2 shows proposed adjustments to plant in service. The Company

19 eliminated from plant in service $356,832 for facilities at the Hartwell Recreation

20 Facility. The detail for the adjustment is shown on schedule B-2.5.

21 Q. **PLEASE DESCRIBE SCHEDULE B-2.3.**

22 A. Schedule B-2.3 shows gross additions, retirements and transfers by FERC and

23 Company Account for each major property grouping from March 31, 2001, the

1　date certain in the Company's most recent Gas rate case, Case No. 01-1228-GA-

2　AIR, through the date certain in this case of March 31, 2007.

3　Q.　PLEASE DESCRIBE SCHEDULE B-2.4.

4　A.　Schedule B-2.4 is entitled "Leased Property." The Company began leasing new

5　gas meters in 1999 and regulators in 2002. This schedule also presents the detail

6　of the Company's Plant investment in Leasehold Improvements that are

7　capitalized in Account 1900 - Structures and Improvements. The Company made

8　capital improvements to leased office space at the Fourth and Walnut (Clopay)

9　Building, and the Atrium II Building, both located in downtown Cincinnati.

10　Q.　PLEASE DESCRIBE SCHEDULE B-2.5.

11　A.　Schedule B-2.5 contains data on property excluded from rate base. The property

12　is detailed by Company account and vintage year. The Company has excluded the

13　original cost and accumulated depreciation and amortization of the Hartwell

14　Recreation Facility from rate base. Totals on Schedule B-2.5 are carried forward

15　to Schedule B-2.2 as an adjustment to plant in service and Schedule B-3.1 as an

16　adjustment to accumulated depreciation and amortization.

17　Q.　PLEASE DESCRIBE SCHEDULE B-3.

18　A.　Schedule B-3 shows the total plant investment and the Reserve for Accumulated

19　Depreciation and Amortization by FERC and Company Account grouping as of

20　March 31, 2007. The adjusted jurisdictional reserve in the last column is

21　applicable to the jurisdictional plant shown on Schedule B-2, "Adjusted

22　Jurisdiction."

23　Q.　PLEASE DESCRIBE SCHEDULE B-3.1.

1   A.   Schedule B-3.1 shows proposed adjustments to Accumulated Depreciation and

2   Amortization. The Company has eliminated from Accumulated Depreciation and

3   Amortization $70,503 associated with the Hartwell Recreation Facility. The

4   detail for the adjustment is shown on Schedule B-2.5.

5   Q.   **PLEASE DESCRIBE SCHEDULE B-3.2.**

6   A.   Schedule B-3.2 lists the jurisdictional plant investment and reserve balance at

7   March 31, 2007 for each FERC and Company Account within each major

8   property grouping. It also shows the proposed depreciation and amortization

9   accrual rate, calculated annual depreciation and amortization expense, percentage

10   of net salvage, average service life and curve form, as applicable, for each

11   account. The calculated annual depreciation and amortization for Gas Plant was

12   determined by multiplying the adjusted jurisdictional plant investment at March

13   31, 2007, by the proposed Gas depreciation or amortization accrual rate. With

14   this filing, the Company filed with the Commission proposed depreciation and

15   amortization accrual rates. The account numbers referred to in the depreciation

16   study were those in effect in 2006 for the Company. These depreciation and

17   amortization accrual rates were established by Mr. John Spanos of Gannett

18   Fleming Valuation and Rate Consultants, Inc., who supports the depreciation and

19   amortization study in his testimony. The Company requests that the Commission

20   approve the depreciation and amortization accrual rates included in this filing and

21   that the depreciation and amortization accrual rates be effective with the gas rates

22   established in this case.

23   Q.   **PLEASE DESCRIBE SCHEDULE B-3.3.**

1   A.   Schedule B-3.3 shows depreciation accruals, salvage, retirements, cost of removal

2   and transfers by FERC and Company Account for each major property grouping

3   from March 31, 2001, the date certain in the Company's most recent Gas rate case,

4   Case No. 01-1228-GA-AIR, through the date certain in this case of March 31,

5   2007.

6   Q.   **PLEASE DESCRIBE SCHEDULE B-3.4.**

7   A.   Schedule B-3.4 contains accumulated depreciation reserve, depreciation rates and

8   the annual depreciation expense for leased property. This data is presented for gas

9   meters and regulators that the Company began leasing in 1999 and 2002,

10   respectively. This schedule also presents the Company's plant investment for

11   Leasehold Improvements by location, the accumulated amortization reserve, the

12   amortization rates and the annual amortization expense for the leasehold

13   improvements. This amortization is associated with capital improvements as

14   shown on Schedule B-2.4.

15   Q.   **PLEASE DESCRIBE SCHEDULE B-4.**

16   A.   Schedule B-4 is a list of all major projects that qualify for inclusion in rate base as

17   Construction Work in Progress ("CWIP") at the date certain. The Company has

18   not included any CWIP in rate base in this rate proceeding.

19   Q.   **PLEASE DESCRIBE SCHEDULE B-4.1.**

20   A.   This schedule would normally provide additional information for the projects

21   listed on Schedule B-4. Since no projects were listed on Schedule B-4, no data is

22   provided on Schedule B-4.1.

23   Q.   **PLEASE DESCRIBE SCHEDULE B-4.2.**

1 A. This schedule would normally provide additional information for the projects

2 listed on Schedule B-4. Since no projects were listed on Schedule B-4, no data is

3 provided on Schedule B-4.2.

4 Q. **PLEASE DESCRIBE SCHEDULE B-6.2.**

5 A. This schedule would normally present Contributions in Aid of Construction by

6 Account and Subaccount. The Company nets all Contributions in Aid of

7 Construction against gross plant per Federal Power Commission (now FERC)

8 Order No. 490.

9 Q. **PLEASE DESCRIBE SCHEDULE B-9.**

10 A. This schedule would normally include projects that were in CWIP at the date

11 certain of the Company's most recent rate case, and included in rate base for such

12 case. The Company had not included any CWIP projects in rate base in its most

13 recent case, Case No. 01-1228-GA-AIR; therefore, no data is provided on

14 Schedule B-9.

15 Q. **PLEASE DESCRIBE PAGE 1 OF SCHEDULE D-5.**

16 A. I sponsor page 1 of Schedule D-5A and Schedule D-5B, which includes Plant in

17 Service by major property grouping and Reserve for Accumulated Depreciation

18 and Amortization by utility service as of March 31, 2007, the date certain, and

19 December 31, 2006, and for each of the nine prior years. Plant held for future use,

20 acquisition adjustments, construction work in progress and composite

21 depreciation rates have also been provided for the same periods. Schedule D-5A

22 presents this information for DE-Ohio and Schedule D-5B presents the same

23 information on consolidated Duke Energy basis as of the date certain and

1   December 31, 2006 and for Cinergy Corp. for each of the nine prior years. This

2   information is a true and accurate representation of these Company accounts

3   and/or depreciation rates used by the Company during this period.

4 **Q.** **PLEASE DESCRIBE SUPPLEMENTAL FILING REQUIREMENT (C)(15).**

5 A. Supplemental Filing Requirement (C)(15) provides information on depreciation

6   expense related to specific accounts that are charged to clearing accounts.

7 **Q.** **PLEASE DESCRIBE SUPPLEMENTAL FILING REQUIREMENT (C)(18).**

8 A. Supplemental Filing Requirement (C)(18) requests information in the same

9   general format as Schedule B-2.3, which shows plant in service data from the date

10   certain in the Company's last general base rate case to the date certain in the

11   current case. The requested information is available on workpaper WPB-2.3a.

12 **Q.** **PLEASE DESCRIBE SUPPLEMENTAL FILING REQUIREMENT (C)(19).**

13 A. Supplemental Filing Requirement (C)(19) requires that the Company provide the

14   allocation of the depreciation reserve if it was allocated based on a theoretical

15   study. The depreciation reserve was not allocated to accounts based on a

16   theoretical reserve study. See the depreciation study supported by the testimony

17   of Mr. Spanos.

18 **Q.** **PLEASE DESCRIBE SUPPLEMENTAL FILING REQUIREMENT (C)(20).**

19 A. Supplemental Filing Requirement (C)(20) requires that the Company provide the

20   depreciation study supporting any proposed changes to its depreciation accrual

21   rates. The depreciation rates are sponsored by Mr. John Spanos, who prepared the

22   depreciation study provided in response to this filing requirement.

23 **Q.** **PLEASE DESCRIBE SUPPLEMENTAL FILING REQUIREMENT (C)(21).**

1   A.   Supplemental Filing Requirement (C)(21) requests information in the same

2   general format as Schedule B-3.3, which shows depreciation reserve data from the

3   date certain in the Company's last general base rate case to the date certain in the

4   current case. The requested information is available on workpaper WPB-3.3a.

5   Q.   **PLEASE DESCRIBE SUPPLEMENTAL FILING REQUIREMENT (C)(22).**

6   A.   Supplemental Filing Requirement (C)(22) requests information related to

7   construction projects which are 75% complete. This requirement is not applicable

8   because the Company has not included CWIP in rate base in this case.

9   Q.   **PLEASE DESCRIBE SUPPLEMENTAL FILING REQUIREMENT (C)(24).**

10   A.   Supplemental Filing Requirement (C)(24) is information concerning surviving

11   dollars by vintage year of placement (original cost data as of date certain).

III.   CONCLUSION

12   Q.   **WERE SCHEDULES B-2, B-2.1, B-2.2, B-2.3, B-2.4, B-2.5, B-3, B-3.1, B-3.2,**

13   **B-3.3, B-3.4, B-4, B-4.1, B-4.2, B-6.2, THE INFORMATION ON PAGE 1 OF**

14   **SCHEDULE D-5A AND SCHEDULE D-5B, AND SUPPLEMENTAL**

15   **FILING REQUIREMENTS (C)(15), (C)(18), (C)(19), (C)(20), (C)(21),**

16   **(C)(22), AND (C)(24) PREPARED BY YOU OR UNDER YOUR**

17   **DIRECTION AND SUPERVISION?**

18   A.   Yes.

19   Q.   **DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?**

20   A.   Yes.

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In The Matter of the Application of	)	
Duke Energy Ohio, Inc. for an	)	Case No. 07-589-GA-AIR
Increase in Gas Rates	)	
	)	
In the Matter of the Application of	)	
Duke Energy Ohio, Inc. for Approval	)	Case No. 07-590-GA-ALT
of an Alternative Rate Plan for its	)	
Gas Distribution Service	)	
	)	
In the Matter of the Application of	)	
Duke Energy Ohio, Inc. for Approval	)	Case No. 07-591-GA-AAM
to Change Accounting Methods	)	

DIRECT TESTIMONY OF

BRIAN P. DAVEY

ON BEHALF OF

DUKE ENERGY OHIO, INC.

_____ Management policies, practices, and organization

_____ Operating income

_____ Rate Base

_____ Allocations

_____ Rate of return

_____ Rates and tariffs

___x___ Other: budgeting and forecasting process

211328

In The Matter of the Application of Duke Energy Ohio, Inc. for an Increase in Gas Rates	))))	Case No. 07-589-GA-AIR
In the Matter of the Application of Duke Energy Ohio, Inc. for Approval of an Alternative Rate Plan for its Gas Distribution Service	))))))	Case No. 07-590-GA-ALT
In the Matter of the Application of Duke Energy Ohio, Inc. for Approval to Change Accounting Methods	))))	Case No. 07-591-GA-AAM

DIRECT TESTIMONY OF

BRIAN P. DAVEY

ON BEHALF OF

DUKE ENERGY OHIO, INC.

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Testimony discussing DE-Ohio's budgeting and forecasting process.

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211328

BRIAN P. DAVEY DIRECT

I. INTRODUCTION AND PURPOSE

1   Q.   **PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2   A.   My name is Brian P. Davey. My business address is 1000 East Main Street,

3   Plainfield, Indiana 46168.

4   Q.   **BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

5   A.   I am employed by the Duke Energy Corporation ("Duke Energy") affiliated

6   companies as General Manager, Financial Planning and Analysis.

7   Q.   **PLEASE SUMMARIZE YOUR EDUCATION AND PROFESSIONAL**

8   **QUALIFICATIONS.**

9   A.   I received a Bachelor's Degree in Accounting from Indiana University of

10   Indianapolis in 1981. I am also a Certified Public Accountant licensed in the

11   State of Indiana.

12   Q.   **PLEASE SUMMARIZE YOUR WORK EXPERIENCE.**

13   A.   I was hired by Public Service of Indiana, Inc. in 1982 as a Staff Accountant. I

14   held various positions in the Rate, Corporate Accounting and Financial

15   Forecasting departments. In 1994, I was promoted to Financial Forecasting

16   manager and subsequently held various accounting and forecasting manager and

17   director positions in the Commercial Business Unit. In 2003, I was promoted to

18   Assistant Controller. In 2005, I became General Manager, Budgeting and

19   Forecasting. In April 2006, I was named to my current position.

20   Q.   **PLEASE DESCRIBE YOUR DUTIES AS GENERAL MANAGER,**

21   **FINANCIAL PLANNING AND ANALYSIS.**

1   A.   I am responsible for preparing the budgets and forecasts and performing financial

2   analysis for Duke Energy's Midwest Franchised Electric & Gas Businesses,

3   which consists of Duke Energy's public utility operating companies in Ohio,

4   Kentucky and Indiana.

5   Q.   **WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**

6   **PROCEEDING?**

7   A.   I explain Duke Energy Ohio, Inc.'s ("DE-Ohio") budgeting and forecasting

8   process. I also sponsor Supplemental Filing Requirements S-1.0 and S-2, and the

9   F schedules. I provided Supplemental Filing Requirement (C)(12). Finally, I

10   provided projected revenue, sales and customer data for the years 2007 through

11   2011 to Mr. Don Wathen for the preparation of Schedules C-12.1 through C-12.4.

         II.   THE BUDGETING AND FORECASTING PROCESS

12   Q.   **DESCRIBE THE SOURCE OF THE FORECASTED FINANCIAL DATA**

13   **USED IN THIS CASE.**

14   A.   The forecasted data used in this proceeding is based on the annual budget for DE-

15   Ohio as contained in DE-Ohio's 2007 Annual Budget. I supervised the

16   coordination and development of this budget and it was reviewed and approved

17   by the Company's upper management and Board of Directors.

18   Q.   **DESCRIBE THE BUDGETING AND FORECASTING PROCESSES**

19   **THAT YOU USED TO DEVELOP THE BASE AND TEST PERIODS IN**

20   **THIS PROCEEDING.**

21   A.   Budgeting is done at organizational levels known as the "responsibility centers."

22   The centers use the guidelines provided by the Company's Budgeting and

1 Business Support Department. The centers prepare detailed responsibility

2 budgets consisting of expense items, certain types of revenues, and construction

3 budgets for capital projects. The information is consolidated into a corporate

4 budget and reviewed by executive management. One or more iterations of the

5 annual budget are typically required before final approval by executive

6 management and the Board of Directors. This "bottom-up" approach has been an

7 effective process for managing costs.

8 **Q.** **DESCRIBE THE GUIDELINES PROVIDED BY THE BUDGETING AND**

9 **BUSINESS SUPPORT DEPARTMENT IN DEVELOPING DE-OHIO'S**

10 **ANNUAL RESPONSIBILITY (OPERATION AND MAINTENANCE)**

11 **BUDGET.**

12 **A.** These guidelines provide a detailed set of instructions for creating a center

13 budget. For example, there are detailed instructions for budgeting employee labor

14 data, such as the escalation rates for non-union labor expenses, indirect labor and

15 fringe benefit loading rates, and how to handle staff additions or deletions.

16 Individual employees and certain associated costs of the employees are included

17 or excluded in any given center's budget according to the expected future

18 reporting assignment for that employee. Detailed instructions for non-labor

19 related expenses, such as transportation and information technology expenses, are

20 included. There are instructions for handling contract labor and supplies, and

21 guidelines for identifying a capital versus expense item. Budget coordinators are

22 required to use these assumptions and/or instructions in projecting their future

23 departmental expenses. These operation and maintenance ("O&M") budgeting

1		guidelines are reflected in the budgets and forecasts that are submitted to the
2		Company's upper management and Board of Directors for approval, and are also
3		reflected in the forecasted financial data in this proceeding.
4	Q.	**WERE ANY CHANGES MADE TO DE-OHIO'S 2007 ANNUAL BUDGET**
5		**THAT IS USED FOR THE FORECASTED PART OF THE TEST PERIOD**
6		**IN THIS CASE?**
7	A.	Yes. At Mr. Wathen's request, some minor changes were made to ensure that the
8		budget data was properly allocated to DE-Ohio's gas operations and was reflected
9		in the proper accounts. These changes were provided to Mr. Wathen, who used
10		this information to adjust the revenue requirement in Schedule C-3.11.

III. SCHEDULES AND FILING REQUIREMENTS SPONSORED BY WITNESS

11	Q.	**PLEASE DESCRIBE SUPPLEMENTAL FILING REQUIREMENT S-1.0.**
12	A.	Supplemental Filing Requirement S-1.0 contains five-year financial forecast for
13		certain capital expenditure information exceeding five percent of budget for the
14		five years 2008 through 2012. Mr. Carl Council provided the net plant cost
15		information used to develop this data.
16	Q.	**PLEASE DESCRIBE SUPPLEMENTAL FILING REQUIREMENT S-2.**
17	A.	Supplemental Filing Requirement S-2 contains five-year financial forecast for
18		certain revenue requirement information.
19	Q.	**PLEASE DESCRIBE THE F SCHEDULES.**
20	A.	The Section F schedules contain a projected income statement, rate base
21		summary, capital structure and statement of changes in financial position for the

1   calendar year 2008. The projections are prepared on two bases: (1) assuming that

2   the Company's rate increase request is granted; and (2) assuming no rate increase.

3 Q. **WHAT DOES THE INFORMATION IN THESE SCHEDULES**

4   **DEMONSTRATE?**

5 A. It demonstrates the urgency of the need for the rate relief requested in this

6   proceeding. Despite aggressive cost control measures, without rate relief, DE-

7   Ohio's earned rate of return on net plant in service is projected to decline to

8   4.73% in 2008. This is substantially below the rate of return requested in this

9   proceeding of 8.73%.

10 Q. **PLEASE DESCRIBE SUPPLEMENTAL FILING REQUIREMENT**

11   **(C)(12).**

12 A. Supplemental Filing Requirement (C)(12) is a summary of the forecasting

13   methods used by DE-Ohio for the test period financial data.

IV.   CONCLUSION

14 Q. **WERE THE F SCHEDULES AND SUPPLEMENTAL FILING**

15   **REQUIREMENTS S-1.0, S-2 AND (C)(12) PREPARED BY OR UNDER**

16   **YOUR DIRECTION AND SUPERVISION?**

17 A. Yes.

18 Q. **IS THE INFORMATION YOU SUPPLIED TO MR. WATHEN FOR HIS**

19   **USE IN THE C SCHEDULES ACCURATE, TO THE BEST OF YOUR**

20   **KNOWLEDGE AND BELIEF?**

21 A. Yes.

22 Q. **DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?**

1   A.   Yes.

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In The Matter of the Application of Duke Energy Ohio, Inc. for an Increase in Gas Rates	))))	Case No. 07-589-GA-AIR
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In the Matter of the Application of Duke Energy Ohio, Inc. for Approval to Change Accounting Methods	)))	Case No. 07-591-GA-AAM

DIRECT TESTIMONY OF

STEPHEN G. DE MAY

ON BEHALF OF

DUKE ENERGY OHIO, INC.

_____ Management policies, practices, and organization

_____ Operating income

_____ Rate Base

_____ Allocations

_____ Rate of return

_____ Rates and tariffs

___x___ Other: capital structure, credit quality and related matters

210919

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In The Matter of the Application of Duke Energy Ohio, Inc. for an Increase in Gas Rates	))))	Case No. 07-589-GA-AIR
In the Matter of the Application of Duke Energy Ohio, Inc. for Approval of an Alternative Rate Plan for its Gas Distribution Service	)))))	Case No. 07-590-GA-ALT
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DIRECT TESTIMONY OF

STEPHEN G. DE MAY

ON BEHALF OF

DUKE ENERGY OHIO, INC.

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Testimony sponsoring credit quality, capitalization, capital requirements, credit ratings and related matters.

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I. INTRODUCTION AND PURPOSE

1   Q.   **PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2   A.   My name is Stephen G. De May, and my business address is 526 South Church

3   Street, Charlotte, North Carolina 28202.

4   Q.   **BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

5   A.   I am employed by the Duke Energy Corporation ("Duke Energy") affiliated

6   companies as General Manager, Corporate Finance, and Assistant Treasurer.

7   Q.   **PLEASE SUMMARIZE YOUR EDUCATION AND PROFESSIONAL**

8   **QUALIFICATIONS.**

9   A.   I have a Bachelor of Arts degree in Political Science from the University of North

10   Carolina in Chapel Hill, North Carolina, and a Master of Business Administration

11   degree from the McColl School of Business at Queens University in Charlotte,

12   North Carolina. I am a Certified Public Accountant ("CPA") in the state of North

13   Carolina and I am a member of the American Institute of Certified Public

14   Accountants and the North Carolina Association of CPAs.

15   Q.   **PLEASE SUMMARIZE YOUR WORK EXPERIENCE.**

16   A.   My professional work experience began in 1986 with the public accounting firms

17   of Price Waterhouse (now PricewaterhouseCoopers) and, subsequently, Deloitte,

18   Haskins and Sells (now Deloitte & Touche), where my work focused on tax

19   accounting and consulting for a variety of clients, including C-corporations, S-

20   corporations, partnerships, and high-net-worth individuals. In 1990, I joined

21   Crescent Resources Inc., a then-wholly-owned real estate development subsidiary

22   of Duke Power Company (a predecessor company to today's Duke Energy) where

1		I was responsible for real estate accounting and finance. In 1994, I moved to the
2		Treasury and Corporate Finance department where I have held, except for a two-
3		year period of time, various positions of increasing responsibility. The two-year
4		exception was for the majority of 2004 and 2005, during which time I had the lead
5		responsibility for developing and managing Duke Energy's energy and regulatory
6		policies. I was named to my current position in 2006.
7	Q.	**PLEASE DESCRIBE YOUR DUTIES AS GENERAL MANAGER,**
8		**CORPORATE FINANCE, AND ASSISTANT TREASURER.**
9	A.	I manage a department that provides Corporate Finance and Treasury-related
10		services to Duke Energy and its subsidiaries. Under my supervision, we arrange
11		and execute all capital raising and liquidity transactions, including credit facilities,
12		debt securities, preferred and hybrid securities, and common stock. We manage
13		Duke Energy's credit ratings and we are the primary points of contact for the
14		credit rating agencies. We evaluate and execute on liability management
15		opportunities, such as the economic refinancing of debt obligations, and we
16		manage exposures to changing interest rates. We provide finance-related due-
17		diligence for major capital expenditure proposals as well as corporate merger,
18		acquisition or divestiture transactions. Finally, we oversee and administer the
19		management of investments supporting Duke Energy's pension and retirement
20		benefit plans and nuclear decommissioning trust funds.
21	Q.	**WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**
22		**PROCEEDING?**

1   A.   My testimony addresses Duke Energy Ohio, Inc.'s ("DE-Ohio") credit quality, the

2   Company's capital structure and cost of capital, the Company's current credit

3   ratings, the forecast of the Company's capital requirements, and the Company's

4   financial objectives. I sponsor Schedules D-1A, D-1B, D-2A, D-2B, D-3A, D-

5   3B, D-4A, D-4B and certain information on Schedules D-5A and D-5B. I also

6   sponsor Supplemental Filing Requirement (C)(3).

II. DE-OHIO'S CREDIT QUALITY, CAPITALIZATION AND COST OF CAPITAL

7   Q.   **HOW DO THE CREDIT RATING AGENCIES AND OTHERS ASSESS**

8   **CREDIT QUALITY?**

9   A.   The Company's creditworthiness is an assessment by the credit rating agencies

10   and other creditors of its financial strength, including its ability to raise capital

11   and meet its future financial obligations, and its ability to withstand changes in its

12   business environment. Many qualitative and quantitative factors go into such an

13   assessment. Qualitative aspects may include the Company's regulatory climate,

14   its track record for delivering on its commitments, the strength of its management

15   team, its operating performance, and the strength of its service area. Quantitative

16   measures are primarily based on operating cash flow and focus on the Company's

17   ability to meet its fixed obligations (such as interest expense) on the basis of

18   internally-generated cash and the degree to which the Company maintains debt

19   leverage in relation to its generation of cash. Interest coverage ratios and the

20   percentage of debt to total capital are examples of quantitative measures.

21   Creditors and credit rating agencies generally view both qualitative and

1 quantitative factors in the aggregate when assessing the credit quality of a

2 company.

3 Q. HOW WAS DE-OHIO'S CAPITAL STRUCTURE DEVELOPED FOR

4 PURPOSES OF THIS CASE?

5 A. For purposes of this filing, the Company's capital structure is presented on an

6 operating company basis, as opposed to a holding company basis. More

7 specifically, DE-Ohio's consolidated capital structure is used as the basis for this

8 filing. The capital structure presentation is supported by Mr. Paul Smith.

9 Q. BASED ON THIS PRESENTATION, WHAT WAS DE-OHIO'S

10 CONSOLIDATED CAPITAL STRUCTURE ON AN ADJUSTED

11 FINANCIAL REPORTING BASIS AS OF MARCH 31, 2007?

12 A. DE-Ohio's consolidated capital structure at March 31, 2007, was approximately

13 44.2% debt and 55.8% common equity.

14 Q. WHAT EFFECT DOES CAPITAL STRUCTURE AND RETURN ON

15 EQUITY HAVE ON CREDIT QUALITY?

16 A. Capital structure and return on equity are critical components of credit quality.

17 Equity investors provide the foundation of a company's capital structure by

18 providing significant amounts of capital for which an appropriate economic return

19 is required. Returns to equity investors are realized only after all operating

20 expenses of the business are paid as well as all fixed payment obligations such as

21 debt principal and interest. Because these investors are the last to receive surplus

22 earnings and cash flows, it is their capital that is first at risk if the company

23 suffers a downturn in business or general economic conditions. This dynamic of

1 equity investors receiving "residual" earnings and cash flows provides debt

2 investors a measure of protection. Therefore, the greater the equity component of

3 capitalization, the safer the returns are to debt investors which translates into

4 higher credit quality. In addition, the return on equity, which investors have at

5 risk, is also a key component in the generation of earnings and cash flows. An

6 adequate return on equity helps ensure equity investors receive fair compensation

7 for the capital they have at risk while at the same time helping to protect debt

8 holders. A strong capital structure and an adequate return on equity provide the

9 balance sheet protection and cash flow generation to support high credit quality

10 which in turn creates financial flexibility by providing more readily available

11 access to the capital markets, and ultimately lower overall financing costs.

12 Q. **DO YOU BELIEVE THAT DE-OHIO'S CONSOLIDATED CAPITAL**

13   **STRUCTURE, AS ADJUSTED, HAS AN ADEQUATE EQUITY**

14   **COMPONENT TO ENABLE DE-OHIO TO ACHIEVE THE COMPANY'S**

15   **FINANCIAL STRENGTH AND CREDIT QUALITY OBJECTIVES?**

16 A. Yes. DE-Ohio's existing equity component will enable the Company to maintain

17   its target credit ratings, which will preserve the Company's financial strength and

18   credit quality. This level of equity will enable DE-Ohio to tolerate the volatility

19   of different business cycles while also providing a cushion to the Company's

20   lenders and bondholders.

21 Q. **DOES THE COMPANY'S CAPITAL STRUCTURE AS FILED REFLECT**

22   **A VIEW OF DEBT AND EQUITY THAT IS IDENTICAL TO THAT**

23   **WHICH IS CALCULATED BY THE RATING AGENCIES?**

1 A.   No. As discussed by Mr. Smith, DE-Ohio developed its capital structure for

2   purposes of this filing to include adjustments related to the Duke Energy/Cinergy

3   Corp. merger. These are adjustments that would not be made in the credit rating

4   agencies' calculation of the Company's capital structure. The credit rating

5   agencies calculate the Company's capital structure from publicly filed financial

6   statements and make certain modifications. For example, in calculating the debt

7   component of capital structure, the credit rating agencies include short-term debt

8   and current maturities of long-term debt and then impute *pro-forma* debt amounts

9   to include in their capital structure calculations for long-term fixed obligations

10   which they consider to be "debt equivalents." Examples of "debt equivalents"

11   would include operating lease obligations, long-term purchased power

12   agreements, and under-funded pension plan obligations. Credit rating agency

13   calculations of capital structure typically result in a higher debt component. The

14   increased leverage imputed by the agencies reinforces the need for a strong equity

15   component in DE-Ohio's capital structure.

16 Q.   WHAT IS DE-OHIO'S CONSOLIDATED COST OF LONG-TERM DEBT

17   AS OF MARCH 31, 2007?

18 A.   DE-Ohio's consolidated cost of long-term debt as of March 31, 2007 is 5.87%.

1 Q. DID THE COMPANY TAKE ANY STEPS SINCE ITS LAST GAS BASE

2 RATE CASE IN 2001 TO MANAGE ITS FINANCING COSTS, THUS

3 MITIGATING THE RATE INCREASE PROPOSED IN THIS CASE?

4 A. Yes. DE-Ohio has aggressively managed its financing costs and was able to

5 reduce the cost of long-term debt from 6.94% at March 31, 2001 (the date certain

6 used in Case No. 01-1228-GA-AIR), to 5.87% at March 31, 2007.

7 Q. WHAT IS DE-OHIO'S COST OF EQUITY FOR THE PURPOSES OF

8 THIS FILING?

9 A. Dr. Roger Morin supports a cost of equity of 11.0% for this proceeding.

III. DE-OHIO'S CURRENT CREDIT RATINGS

10 Q. HOW ARE DE-OHIO'S OUTSTANDING SECURITIES CURRENTLY

11 RATED BY THE CREDIT RATING AGENCIES?

12 A. As of the date of this testimony, DE-Ohio's outstanding debt is rated by Standard

13 & Poor's ("S&P") and Moody's Investors Service ("Moody's") as follows:

Rating Agency	S&P	Moody's
Secured Debt Rating	A	A3
Senior Unsecured Rating	A-	Baa1
Ratings Outlook	Stable	Positive
Last Ratings Action	Ratings Upgraded in May 2007	Ratings Affirmed in April 2006

14 Q. PLEASE EXPLAIN WHAT IS MEANT BY THESE CREDIT RATINGS

15 FOR DE-OHIO CONSOLIDATED'S LONG-TERM DEBT.

1   A.   Obligations carrying an "A" credit rating are considered upper-medium grade

2   investment securities subject to low credit risk for the investor. "A" rated debt is

3   presumed to be somewhat susceptible to changes in circumstances and economic

4   conditions; however, the debt issuer's capacity to meet its financial commitments

5   is considered strong. Secured debt obligations usually carry a higher credit rating

6   than unsecured obligations because the collateralization of assets provides an

7   additional measure of protection to investors.

8   S&P may also modify its ratings with the use of a plus or minus sign to

9   further indicate the relative standing within a major rating category. An "A+"

10   credit rating is at the higher end of the "A" credit rating category and an "A-" is at

11   the lower end of the category. Moody's credit rating assignments use the

12   numbers "1", "2", and "3", with the numbers "1" and "3" corresponding to a "+"

13   and "-", respectively. For example, Moody's credit ratings of "A2" and "A3" are

14   the same as "A" and "A-" credit ratings at S&P, respectively.

15   Q.   **WHAT IS MEANT BY A "STABLE" OR "POSITIVE" OUTLOOK?**

16   A.   A rating outlook assesses the potential direction of a long-term credit rating over

17   an intermediate term (typically six months to two years). A "Stable Outlook"

18   indicates the credit ratings are not likely to change whereas a "Positive Outlook"

19   indicates the credit ratings may be raised based on the rating agency's view of

20   potential changes to economic or fundamental business conditions. The positive

21   ratings outlook assigned by Moody's to DE-Ohio stems largely from its

22   assessment of the reduced operating and business risk of the Company and its

23   parent, Duke Energy (which is already reflected in the "Stable Outlook" of S&P).

1   Q.   **DID THE MERGER AFFECT DE-OHIO'S CREDIT RATINGS?**

2   A.   No. The existing credit ratings for DE-Ohio's senior unsecured debt at the time

3   of the merger were "BBB" and "Baa1" by S&P and Moody's, respectively. Both

4   S&P and Moody's affirmed DE-Ohio's existing credit ratings at the time of the

5   merger.

6   Q.   **WHAT FACTORS CAUSED THE RECENT S&P CHANGE IN CREDIT**

7   **RATINGS?**

8   A.   The recent rating action by S&P occurred in May 2007 and was the result of their

9   view that Duke Energy experienced a significant reduction in business risk over

10   the past year due to the disposal of various high-risk businesses and the

11   significant de-leveraging of Duke Energy through the spin-off of its gas company

12   (Spectra Energy Corp). S&P raised the credit ratings on DE-Ohio's secured and

13   unsecured debt from "BBB+" and "BBB", respectively, to "A" and "A-",

14   respectively.

15   Q.   **HAVE THE CREDIT RATING AGENCIES RAISED ANY CONCERNS**

16   **ABOUT DE-OHIO?**

17   A.   While the credit rating agencies have not raised any concerns specific to DE-

18   Ohio, the credit rating agencies have noted the general importance of timely and

19   adequate recovery of all prudent and approved costs as being important to credit

20   quality. Furthermore, S&P's May 21, 2007 ratings action expressed that they

21   anticipate the preservation of the current credit profile will include the ability of

22   the Duke Energy companies to arrive at constructive regulatory decisions that

23   avoid meaningful increases in business risk.

1 Q.   WHY IS IT IMPORTANT FOR DE-OHIO TO HAVE HIGH

2   INVESTMENT-GRADE CREDIT RATINGS?

3 A.   High investment-grade credit ratings provide DE-Ohio with greater financial

4   flexibility, lower overall financing costs with greater access to the capital markets,

5   and are a key component of the Company's ability to maintain a low-cost level of

6   safe, reliable customer service. Strong credit ratings are essential to being able to

7   raise debt capital, as needed, to fund infrastructure requirements and to refinance

8   maturing debt.

9 Q.   DO YOU EXPECT THE OUTCOME OF THE CURRENT RATE

10   PROCEEDING TO HAVE ANY SUBSTANTIAL IMPACT ON THE

11   COMPANY'S CREDIT RATINGS?

12 A.   No, if the Commission approves a constructive outcome. The credit rating

13   agencies perceive the regulatory environment in which DE-Ohio operates as being

14   supportive of credit quality and I believe an approval of a strong equity

15   component of the capital structure and the cost of equity as requested in this filing

16   will support our objective of having strong credit ratings. The following excerpt

17   provides key points made by S&P in their May 21, 2007 ratings action:

18   The stable outlook on Duke Energy reflects the company's
19   satisfactory business profile and expectations of credit protection
20   measures over the intermediate term that supports the current
21   rating. Given the company's increasing focus on regulated
22   operations, Standard & Poor's anticipates that Duke Energy will be
23   able to arrive at constructive regulatory decisions so as to avoid
24   meaningful increases in business risk, thereby preserving its
25   financial profile. Should business risk increase (either through a
26   material, unfavorable regulatory outcome or the pursuit of
27   unregulated operations) or the financial profile weaken, the
28   outlook will be revised to negative and ratings may be lowered. A

1 higher rating is not contemplated, especially in light of Duke
2 Energy's large capital spending program.
3

4 DE-Ohio's credit ratings reflect the agencies' view that the Commission's

5 regulation of the Company will continue to be constructive. Assuming such a

6 constructive outcome is achieved, I do not believe that this proceeding will

7 adversely impact DE-Ohio's credit ratings.

IV. DE-OHIO'S CAPITAL REQUIREMENTS

8 Q. **WHAT ARE DE-OHIO'S CAPITAL REQUIREMENTS DURING THE**

9 **2007-2012 TIME PERIOD?**

10 A. DE-Ohio unconsolidated's capital requirements are projected to be approximately

11 $3.5 billion during the period 2007-2012. This amount consists principally of

12 approximately $2.7 billion in projected capital expenditures and approximately

13 $0.8 billion in debt maturing (including capital lease maturities) from 2007-2012.

14 Q. **HOW WILL DE-OHIO'S CAPITAL REQUIREMENTS BE FUNDED?**

15 A. DE-Ohio's capital requirements during the 2007-2012 period are expected to be

16 partially funded from internal cash generation, net of dividends, of approximately

17 $2.0 billion with the balance of approximately $1.5 billion to be funded

18 principally from the issuance of debt (both short- and long-term). Equity funding

19 requirements, to the extent they are required to maintain an appropriate capital

20 structure for the Company, may be satisfied through either a reduction in the

21 dividends the Company pays to its parent or through the receipt of equity

22 contributions from its parent.

V. DE-OHIO'S FINANCIAL OBJECTIVES

1   Q.   **WHAT ARE DE-OHIO'S FINANCIAL OBJECTIVES?**

2   A.   DE-Ohio's general financial objective is to have and maintain assured and

3   reasonable access to the capital markets in order to continue to provide cost-

4   effective, safe, adequate, environmentally-compliant and reliable service to our

5   customers. Specific financial objectives necessary to enhance or maintain the

6   desired financial strength include: (a) maintaining at least a 50% common equity

7   ratio for DE-Ohio on a financial capitalization basis; (b) achieving and

8   maintaining at least an "A-/A3" (S&P/Moody's, respectively) credit rating for

9   DE-Ohio's senior unsecured debt, and ultimately improving the credit rating for

10   DE-Ohio's senior unsecured debt to an "A/A2" (S&P/Moody's, respectively) (an

11   increase in the unsecured debt ratings of DE-Ohio would likely result in a

12   commensurate increase in the secured debt ratings of the Company); (c)

13   maintaining sufficient cash flows to meet our obligations; and (d) maintaining a

14   sufficient return on equity to fairly compensate our shareholders for their invested

15   capital.

16   Q.   **DO YOU BELIEVE THAT DE-OHIO'S CUSTOMERS WILL BENEFIT IF**

17   **DE-OHIO IS ABLE TO ACHIEVE ITS FINANCIAL OBJECTIVES? IF**

18   **SO, HOW?**

19   A.   Yes. There are many reasons why our customers will benefit from the financial

20   objectives that we have established. As previously discussed, maintaining a

21   strong capital structure with a sufficient return on equity helps to ensure safer

22   returns to debt holders which translates into higher credit quality, allowing the

1   Company the financial flexibility to attract capital from the debt and equity

2   markets as needed. In addition, maintaining sufficient cash flows to meet our

3   obligations helps to ensure the financial strength of the Company and further

4   strengthens credit quality. The benefits of these financial objectives include not

5   only lower overall financing costs, but also greater assurance of access to the

6   capital markets as needed, thus improving DE-Ohio's ability to maintain a safe,

7   reliable, and low cost level of customer service for its customers.

VI.   SCHEDULES AND FILING REQUIREMENTS
SPONSORED BY WITNESS

8   Q.   PLEASE DESCRIBE SUPPLEMENTAL FILING REQUIREMENT (C)(3).

9   A.   Supplemental Filing Requirement (C)(3) is a copy of the prospectus from the

10   most recent common stock offering and bond offering.

11   Q.   PLEASE DESCRIBE SCHEDULES D-1A AND D-1B.

12   A.   Schedule D-1A is a summary showing the calculation of the rate of return on rate

13   base being proposed in this case for DE-Ohio. Schedule D-1B is a similar

14   summary of the rate of return using Duke Energy's capital structure. I sponsor

15   the information being used for the calculation of the debt component and Dr.

16   Morin provided the rate of return on equity.

17   Q.   PLEASE DESCRIBE SCHEDULES D-2A AND D-2B.

18   A.   Schedule D-2A provides details about the short-term debt position for DE-Ohio as

19   of March 31, 2007. Schedule D-2B provides details about the short-term debt

20   position for Duke Energy as of March 31, 2007.

21   Q.   PLEASE DESCRIBE SCHEDULES D-3A AND D-3B.

1 A. Schedule D-3A provides the details about the long-term debt position and cost of

2   DE-Ohio's long-term debt as of March 31, 2007, which were used to calculate the

3   rate of return. Schedule D-3B provides details about the long-term debt position

4   and cost of long-term debt for Duke Energy as of March 31, 2007.

5 Q. **PLEASE DESCRIBE SCHEDULES D-4A AND D-4B.**

6 A. Schedule D-4A is used to provide the cost of preferred stock used to calculate the

7   rate of return; however, this schedule is submitted in blank form because DE-

8   Ohio does not have preferred stock. Schedule D-4B provides similar information

9   for Duke Energy and, like DE-Ohio, there is no preferred stock outstanding.

10 Q. **WHAT INFORMATION DID YOU PROVIDE FOR SCHEDULE D-5A**

11   **AND D-5B?**

12 A. I provided information on the cost of capital, fixed charge coverage, stock and

13   bond ratings, and data related to common stock.

VII. CONCLUSION

14 Q. **WERE   SCHEDULES   AND   THE   SUPPLEMENTAL   FILING**

15   **REQUIREMENT YOU SPONSOR PREPARED BY YOU OR UNDER**

16   **YOUR DIRECTION AND CONTROL?**

17 A. Yes.

18 Q. **DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?**

19 A. Yes.

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

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DIRECT TESTIMONY OF

GARY J. HEBBELER

ON BEHALF OF

DUKE ENERGY OHIO, INC.

_____   Management policies, practices, and organization

_____   Operating income

_____   Rate Base

_____   Allocations

_____   Rate of return

_____   Rates and tariffs

___x___   Other: request for re-approval of Rider AMRP and related matters

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

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DIRECT TESTIMONY OF

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ON BEHALF OF

DUKE ENERGY OHIO, INC.

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GJH-1 – Examples of recent price increases

I. INTRODUCTION AND PURPOSE

1 Q. **PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is Gary J. Hebbeler. My business address is 139 East Fourth Street,

3 Cincinnati, Ohio 45202.

4 Q. **WHAT IS YOUR CURRENT POSITION?**

5 A. I am employed by the Duke Energy Corporation ("Duke Energy") affiliated

6 companies as General Manager, Gas Engineering.

7 Q. **PLEASE SUMMARIZE YOUR EDUCATION AND PROFESSIONAL**

8 **QUALIFICATIONS.**

9 A. I am a graduate of the University of Kentucky, where I obtained my Bachelor of

10 Science in Civil Engineering. In 1994, I obtained my license as a Professional

11 Engineer in the Commonwealth of Kentucky and by reciprocity later in the State

12 of Ohio.

13 Q. **PLEASE SUMMARIZE YOUR BUSINESS EXPERIENCE.**

14 A. I began working for The Cincinnati Gas & Electric Company ("CG&E"), now

15 known as Duke Energy Ohio, Inc. ("DE-Ohio"), in 1987 as an engineer in the Gas

16 Engineering Department. I initially worked as a project engineer. I was

17 responsible for designing gas mains and water lines; coordinating projects with

18 governmental agencies and consulting firms; calculating pipe capacity and stress

19 calculations on pipes; and evaluating company paving standards and designs. I

20 worked for CG&E, and later for Cinergy Services, Inc., until 1998. I was Vice

21 President for Michels Concrete Construction, Inc. during 1998 and returned to

22 Cinergy Corp.'s Gas Engineering Department in 1999. In 2000, I was promoted

1		to Manager, Contractor Construction. In this position, I helped design the
2		Accelerated Main Replacement Program ("AMRP"). I also managed the
3		construction activities for replacing the cast iron/bare steel pipe under the AMRP.
4		In 2002, I was promoted to Manager, Gas Engineering. I am responsible for
5		managing the engineering activities and the capital expenditures for Gas
6		Operations in DE-Ohio's and Duke Energy Kentucky, Inc.'s ("DE-Kentucky")
7		gas distribution systems. In 2006, I was promoted to my current position of
8		General Manager, Gas Engineering. In addition to my responsibilities for gas
9		engineering activities and capital expenditures, I am responsible for construction
10		activities for the AMRP, street improvements, pressure improvements and major
11		projects for Gas Operations in DE-Ohio's and DE-Kentucky's gas distribution
12		systems.
13	Q.	**WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**
14		**PROCEEDING?**
15	A.	I discuss DE-Ohio's AMRP and I support DE-Ohio's request to re-approve Rider
16		AMRP. I support DE-Ohio's request to take ownership of the curb-to-meter
17		service lines at the time of initial installation, or when DE-Ohio replaces the riser,
18		or replaces an existing curb-to-meter service line. I support DE-Ohio's request to
19		modify Rider AMRP to include recovery of riser replacement costs as a capital
20		cost. I describe the Company's new and planned major infrastructure investments
21		since our last general gas rate case. I also discuss the Company's Integrity
22		Management Program. Finally, I sponsor Supplemental Filing Requirement
23		(C)(13).

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II.   REQUEST TO RE-APPROVE RIDER AMRP

1   Q.   **PLEASE EXPLAIN THE AMRP.**

2   A.   DE-Ohio adopted the AMRP in 2000, with construction beginning in 2001, to

3   accelerate its replacement schedule for cast iron and bare steel mains and

4   associated service lines, in order to improve the safety and reliability of DE-

5   Ohio's natural gas distribution system.

6   When DE-Ohio adopted this program, its cast iron pipe in service dated

7   back to 1873 and its bare steel pipe in service dated back to 1884. Cast iron and

8   bare steel pipe, however, are more prone to leaks than plastic and coated,

9   cathodically protected steel, which are now the material of choice for main

10   construction throughout the United States. In 1971, the U.S. Department of

11   Transportation adopted regulations removing cast iron from its list of approved

12   materials for new pipe construction.

13   DE-Ohio adopted formal cast iron and bare steel main replacement

14   programs in 1988 and 1989, respectively. An in-house developed program was

15   used in conjunction with two commercially available programs, known as the

16   Cast Iron Maintenance Optimization System ("CIMOS"®) and the Bare Steel

17   Maintenance Optimization System ("BSMOS"®), respectively. These programs

18   identified certain factors associated with cast iron and bare steel main activities,

19   such as year installed, operating pressure, length of pipe and number of prior

20   activities. The programs then developed a ranking system that DE-Ohio used to

21   determine which sections of cast iron and bare steel main to replace. The in-

1   house program is still being used to target these types of pipe replacement

2   projects.

3   Under the CIMOS® and BSMOS® programs, DE-Ohio was replacing the

4   cast iron and bare steel mains on a replacement schedule that would have taken

5   approximately 90 years to complete. By that time, the mains that DE-Ohio would

6   have been replacing would have been over 200 years old.

7   Q. DID DE-OHIO OBTAIN ANY INDEPENDENT INVESTIGATION

8   RELATING TO THE AMRP?

9   A. Yes. DE-Ohio performed a detailed review of its own operation and maintenance

10   practices, including the leak rates for the different types of pipe materials. DE-

11   Ohio also retained Stone & Webster, an engineering firm, in 2000 to

12   independently review the background, operation and maintenance of DE-Ohio's

13   cast iron and bare steel mains, including DE-Ohio's CIMOS® and BSMOS®

14   programs, as well as the proposed AMRP. Stone & Webster performed the

15   comprehensive study that we used in developing the AMRP.

16 Q. WHAT RECOMMENDATIONS DID STONE & WEBSTER MAKE?

17 A. Stone & Webster's ultimate recommendation, at page 10 of their report, was that

18   DE-Ohio should "become much more aggressive in replacing both CI and BS

19   [cast iron and bare steel] mains for safety and risk considerations." Stone &

20   Webster based this conclusion on the leak rates for the various types of pipe and

21   on DE-Ohio's then-existing rate of cast iron and bare steel main replacement.

22 Q. DID DE-OHIO ADOPT THE AMRP?

1   A.   Yes, as I mentioned previously, DE-Ohio started the AMRP construction in 2001.

2   The Commission approved a tracking mechanism known as Rider AMRP in its

3   May 30, 2002 order in Case No. 01-1228-GA-AIR, which allows DE-Ohio to

4   timely recover the costs related to the AMRP.

5   Q.   **PLEASE DISCUSS THE RESULTS OF THE AMRP TO DATE.**

6   A.   The AMRP has been quite successful in allowing DE-Ohio to reduce the amount

7   of cast iron and bare steel mains in its distribution system. This has resulted in

8   substantial benefits to DE-Ohio's customers and to the public at large.

9   DE-Ohio's gas distribution system consists of approximately 5,358 miles

10   of distribution mains. From 2001 through 2006, DE-Ohio has replaced

11   approximately 559 miles of cast iron and bare steel mains and approximately

12   45,000 main-to-curb service lines. DE-Ohio estimates that it has approximately

13   602 remaining miles of cast iron and bare steel mains of twelve-inch and smaller

14   diameter. DE-Ohio has therefore replaced nearly one-half of its cast iron and bare

15   steel mains, measured in terms of pipe length, since the AMRP has been in effect.

16   Customers and the public at large benefit from the improved safety and

17   reliability of DE-Ohio's natural gas distribution service. One key safety measure

18   of the AMRP's success is the leak rate for DE-Ohio's gas distribution system.

19   The incidence of leaks repaired has decreased significantly, from 6,223 in 2002 to

20   approximately 4,913 in 2006.

21   This reduced incidence of leaks has caused DE-Ohio's maintenance

22   accounts associated with leaks to decline from approximately $6.4 million (which

23   is included in the Company's present base rates) to $4.1 million in 2006. To date,

1   customers have realized approximately $8.5 million in maintenance savings

2   through Rider AMRP. These maintenance savings have been returned to

3   customers through the Rider AMRP tracking mechanism. Additionally, the test

4   year maintenance expense reflects these lower maintenance costs, so the

5   maintenance savings are reflected in the revenue requirement sponsored by Mr.

6   Don Wathen in this case. Customers also benefit from Rider AMRP because DE-

7   Ohio has not had a need to file frequent and costly general gas rate cases to

8   recover its capital expenditures for the AMRP. The Commission has conducted

9   annual Rider AMRP proceedings for DE-Ohio to update this tracking mechanism

10   in an efficient and expeditious manner.

11   Q.   HOW DOES DE-OHIO PLAN FOR CAST IRON AND BARE STEEL

12   MAIN REPLACEMENT UNDER THE AMRP?

13   A.   The AMRP is designed to replace the cast iron and bare steel in the system that is

14   12 inches in diameter or smaller. For larger diameters, the pipe is either coated,

15   protected steel or contains only a small amount of cast iron and bare steel. The

16   hubs on most of the larger diameter cast iron pipe have been repaired and the pipe

17   is in acceptable condition. These pipes will be monitored and replaced if

18   necessary in conjunction with other improvement projects.

19   The AMRP consist of four types of projects: Modules, CIMOS®,

20   BSMOS® and Street Improvements. The Module work encompasses two- to five-

21   mile replacement segments and is a proactive program to replace cast iron and

22   bare steel. CIMOS® and BSMOS® are responsive programs to replace the cast

23   iron and bare steel in the system with the highest possibility of developing future

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1   incidents. Street Improvement work involves replacing cast iron and bare steel

2   pipe as a result of projects initiated by governmental entities. In addition to

3   replacing cast iron and bare steel mains, DE-Ohio replaces associated services as

4   part of the AMRP.

5 **Q. DOES DE-OHIO REPLACE ANY PLASTIC PIPE UNDER THE AMRP?**

6 A.   Yes. Under the AMRP, DE-Ohio replaces plastic main-to-curb services and short

7   segments of plastic mains which DE-Ohio encounters while replacing the cast

8   iron and bare steel mains.

9 **Q. WHY DOES DE-OHIO REPLACE THIS PLASTIC PIPE AS PART OF**

10   **THE AMRP?**

11 A.   DE-Ohio has installed short segments of plastic mains and plastic main-to-curb

12   services to repair leaks in cast iron or bare steel pipe. This occurred both before

13   DE-Ohio implemented the AMRP and, after implementing the AMRP, when a

14   leak developed in the cast iron or bare steel pipe prior to scheduled replacement

15   under the AMRP. When DE-Ohio replaces a large section of cast iron or bare

16   steel main under the AMRP, it is more economic to replace the existing plastic

17   main-to-curb services, and the short sections of plastic pipe, than to try to re-use

18   them.

19 **Q. DOES DE-OHIO REQUEST THAT THE COMMISSION TAKE ANY**

20   **ACTION REGARDING HOW THESE PLASTIC MAIN-TO-CURB**

21   **SERVICES AND SHORT SEGMENTS OF PLASTIC PIPE ARE**

22   **TREATED UNDER RIDER AMRP?**

1 A. Yes. If the Commission re-approves Rider AMRP, DE-Ohio requests that the

2   Commission include language in its order that explicitly allows DE-Ohio to

3   recover costs for plastic main-to-curb services and short segments of plastic pipe

4   that DE-Ohio replaces as part of the AMRP. This will eliminate any possible

5   confusion regarding whether these costs are recoverable under Rider AMRP, and

6   it will eliminate an issue that has been raised during the annual Rider AMRP

7   proceedings.

8 Q. HOW MANY MILES OF CAST IRON AND BARE STEEL MAINS HAS

9   DE-OHIO REPLACED UNDER THE AMRP TO DATE?

10 A. Since starting the AMRP construction in 2001, we have replaced the following

11   miles of cast iron and bare steel mains:

Year	Miles Replaced
2001	70
2002	102
2003	103
2004	99
2005	99
2006	86

12 Q. WHY HAS THE MILES OF MAIN REPLACED DECLINED SINCE 2005?

13 A. We have managed to keep costs at the lowest possible levels because we do

14   approximately 95% of the annual AMRP work using outside contractors selected

15   through a competitive bidding process. The competitive bidding process allows

16   DE-Ohio to award contracts to the lowest and best bidder. Each year, we have

17   made roughly equal investments for the AMRP, consistent with the rate cap levels

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1   established by the Commission's May 30, 2002 order in Case No. 01-1228-GA-

2   AIR.   There are three basic reasons why the number of miles we can replace with

3   this level of investment has declined recently.

4   First, general inflation has prevented us from replacing the same number

5   of miles of main with the same level of investment.   Costs for construction

6   materials and labor have increased significantly since 2005.   Attachment GJH-1

7   shows unit cost increases for the major components of the AMRP.   In my opinion,

8   these cost increases result from other utilities adopting main replacement

9   programs similar to the AMRP and also adopting integrity management programs

10   in response to new gas pipeline safety regulations promulgated by the U.S.

11   Department of Transportation.

12   Second, we adopted new installation procedures in 2006 in response to an

13   incident in Middletown, Ohio, where a gas line breached a sewer line.   This was

14   not discovered until a plumber augered out the resulting clogged sewer line.   The

15   plumber's auger pierced the gas line and caused an explosion.   DE-Ohio formerly

16   relied on municipalities to provide us with records of where their sewer lines were

17   located.   After this incident, however, our investigation revealed that some

18   municipalities do not maintain reliable records of sewer locations.   We changed

19   our installation practices to perform a pre-locate of the sewer lines before and

20   videocamera the location of the sewers after the gas main installation, to ensure

21   that no sewer line is breached during the gas main installation process.   We also

22   limited the situations where we will allow installation of curb-to-meter service

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1   lines using directional drilling. These new installation procedures have increased

2   AMRP costs but we must follow these procedures in the interest of safety.

3   Third, we are now replacing gas mains in more urban locations, where

4   more of the gas lines tend to be located under paved surfaces. This increases the

5   labor, material and restoration cost necessary to replace the gas mains and to

6   restore the construction site to an acceptable condition. In addition, DE-Ohio is

7   encountering more gas lines in unacceptable locations. The U.S. Department of

8   Transportation's ("DOT") Gas Pipeline Safety regulations require that gas lines

9   be installed in locations that will not present safety hazards if a leak occurs.

10   Relocating the new gas lines to a different, accessible location often increases our

11   costs.

12 **Q.** **HOW MANY MILES OF CAST IRON AND BARE STEEL MAIN DOES**

13   **DE-OHIO PLAN TO REPLACE UNDER THE AMRP DURING THE**

14   **NEXT NINE YEARS, AND WHAT IS THE PROJECTED COST?**

15 **A.** From 2007 through 2015, DE-Ohio plans to replace 602 miles of cast iron and

16   bare steel mains, main-to-curb and curb-to-meter services, at an estimated cost of

17     $558 million.

18 **Q.** **DOES DE-OHIO SEEK COMMISSION RE-APPROVAL FOR RIDER**

19   **AMRP?**

20 **A.** Yes. DE-Ohio requests that the Commission re-approve Rider AMRP to enable

21   DE-Ohio to continue the AMRP. This would avoid any adverse impact on DE-

22   Ohio's financial condition which would occur if Rider AMRP is not re-approved.

23   Since the beginning of the AMRP, DE-Ohio has efficiently executed the program.

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1 DE-Ohio's annual Rider AMRP filings have submitted the necessary cost

2 information to allow the Commission to process these cases efficiently.

3 Additionally, DE-Ohio has operated the program such that it is on schedule and at

4 competitive rates. DE-Ohio has maintained a replacement schedule that would

5 allow it to complete the program in a timely manner.

6 DE-Ohio has efficiently managed the program by awarding the

7 construction contracts for the AMRP through an annual bidding process. This has

8 allowed DE-Ohio to keep its costs at reasonable levels. I previously discussed the

9 customer benefits resulting from the AMRP. I expect that customers will

10 continue to realize these same types of benefits by continuing this program

11 through 2015. DE-Ohio therefore requests that the Commission re-approve the

12 AMRP through 2015, and re-approve Rider AMRP until all investment is

13 included in base rates, to allow for timely recovery of the remaining capital

14 expenditures associated with the AMRP.

III.   OWNERSHIP OF SERVICE LINES

15 Q.   WHO CURRENTLY OWNS THE CURB-TO-METER SERVICE LINE?

16 A.   In DE-Ohio's gas distribution system, the customer has historically owned the

17 portion of the gas service from the curb to the meter, and has been responsible for

18 installing and maintaining this portion of the gas service. Upon information and

19 belief, Ohio is one of only a handful of states where the customer owns the curb-

20 to-meter service line.

21 Q   HOW DOES DE-OHIO CURRENTLY TREAT CURB-TO-METER

22 SERVICE LINES UNDER RIDER AMRP?

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1   A.   When DE-Ohio replaces a customer's curb-to-meter service line as part of the

2   AMRP program, we expense the cost and recover it through Rider AMRP. For

3   any other curb-to-meter service line replacement, we recover the amount of

4   expense reflected in base rates. We recover the cost when Rider AMRP is

5   updated.

6   Q.   **WHAT DOES DE-OHIO PROPOSE REGARDING OWNERSHIP OF THE**

7   **CURB-TO-METER SERVICE LINES?**

8   A.   DE-Ohio proposes to assume ownership of the curb-to-meter service lines,

9   including risers. DE-Ohio proposes to take ownership of these service lines

10   whenever a new service line or riser is installed or whenever DE-Ohio replaces an

11   existing curb-to-meter service line or replaces an existing riser.

12   The Company's proposal is fair to customers because the Company would

13   assume ownership of the service line when the Company makes an investment in

14   the service line – either at the time of installation or when the Company replaces a

15   riser or replaces a service line.

16   Q.   **HOW WOULD CUSTOMERS BENEFIT FROM DE-OHIO'S PROPOSAL**

17   **TO ASSUME OWNERSHIP OF THE CURB-TO-METER SERVICE**

18   **LINE?**

19   A.   Customers would benefit in three ways. First, this would take the pressure off the

20   customer in deciding whether to replace the service line. In my opinion,

21   customers in neighborhoods that the AMRP has not yet reached will occasionally

22   avoid replacing their service line or riser because they don't want to incur the

23   cost. If the Company owns the service line and riser, then the Company would

1   decide when to replace the service line or riser. This would produce many

2   benefits.

3   This would allow the Company to replace facilities proactively, before an

4   incident occurs. The Company could develop proactive service line/riser

5   replacement programs based on whether equipment is at risk for an incident,

6   similar to the Riser Optimization Program and the Integrity Management

7   Program. This also would allow the Company to replace facilities in a systematic,

8   orderly manner that is more efficient and less costly than sending a repair crew to

9   a customer's location whenever a customer calls to report a leak. This would also

10   allow DE-Ohio to implement service line/riser replacement programs in

11   conjunction with other safety programs, thus minimizing disruption and

12   inconvenience for customers. This would allow the Company to use properly

13   trained and certified installers. Finally, this would allow the Company to

14   capitalize the cost, and spread the rate impact over a longer time period and thus

15   mitigating the rate impact on customers.

16   Q. **WHY DOES DE-OHIO WANT TO ASSUME OWNERSHIP OF SERVICE**

17   **LINES AT THE TIME OF INSTALLATION?**

18   A. This will enhance DE-Ohio's ability to provide safe and reliable service by giving

19   DE-Ohio more control over the installation process. DE-Ohio has construction

20   standards which must be followed when installing the service line. These

21   standards provide for matters such as the location of the service line; the depth at

22   which the service line is buried; the type of soil in which the service line can be

23   installed; and the type of aggregate used to backfill the service line trench. DE-

1   Ohio performs an inspection to determine whether the customer's service line

2   meets these requirements; however, DE-Ohio would be better able to ensure that

3   the service line is installed properly if DE-Ohio uses its qualified, experienced

4   work force to do the installation.

5   Additionally, the U.S. DOT Pipeline and Hazardous Materials Safety

6   Administration is considering adding new construction to the existing Office of

7   Pipeline Safety ("OPS") Operator Qualification ("OQ") rules. The OQ rules

8   currently require local distribution companies to ensure that independent

9   contractors performing operation and maintenance work on the distribution

10   system are properly qualified. If the OQ rules are expanded to cover new

11   construction, then utilities would be required to follow stringent guidelines for

12   verifying the qualifications of independent contractors who install new service

13   lines.

14   The proposed expansion of the OQ rules to include new construction, if

15   adopted, would require DE-Ohio to verify the installers' qualifications and to

16   inspect their work for compliance with OPS installation procedures. We would

17   be required to observe the individual performing the work and then approve or

18   disapprove. Our preferred method, however, is to have our own employees or

19   contractors qualified under our program perform these installations. If we assume

20   ownership of the curb-to-meter service, this would allow us to implement this

21   preferred option. These personnel would be qualified under DE-Ohio's OQ

22   Program that has been reviewed and approved by the Commission's Pipeline

23   Safety Staff. In this manner, we could ensure that only OQ qualified personnel

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1   would perform work on gas piping, which would be required under the proposed

2   rules for new construction.

3 **Q. WHAT APPROVALS DOES DE-OHIO REQUEST FROM THE**

4   **COMMISSION TO ALLOW IT TO ASSUME OWNERSHIP OF SERVICE**

5   **LINES AT THE TIME OF INSTALLATION?**

6 **A.** DE-Ohio requests language changes to the service regulations portion of its tariff

7   to reflect this change. These proposed tariff sheets that must be changed are

8   Sheet Nos. 21 and 22, as also discussed in Mr. Ziolkowski's testimony.

IV.   RISER REPLACEMENT

9 **Q. PLEASE DISCUSS DE-OHIO'S REPLACEMENT OF GAS RISERS.**

10 **A.** DE-Ohio developed the Riser Optimization Program in 2004, to replace certain

11   types of flexible risers. The flexible riser is a fitting that connects the service line

12   to the meter assembly. Flexible riser fittings are used for outside meters. One

13   type of flexible riser fitting is known as a service head adapter ("SHA") style

14   riser. In 2004, DE-Ohio developed the Riser Optimization Program as a proactive

15   program to target those factors on SHA risers that have a high propensity for

16   leaks. As of the end of 2006, DE-Ohio had approximately 87,000 SHA-style

17   risers on its distribution system.

18 **Q. PLEASE EXPLAIN THE RISER OPTIMIZATION PROGRAM.**

19 **A.** The Riser Optimization Program is similar to the CIMOS® and BSMOS®

20   programs in that these programs identify criteria associated with past activities to

21   develop a replacement program. In fact, some of the criteria, such as operating

22   pressure, type of pipe material and year of installation, are the same for all of the

1		programs. Under this program, DE-Ohio annually evaluates the activities
2		associated with SHA risers to determine the number to be replaced. DE-Ohio
3		selects for replacement those risers that have similar factors to risers associated
4		with a high incidence of leaks.
5	Q.	**HOW MANY RISERS HAS DE-OHIO REPLACED UNDER THE RISER**
6		**REPLACEMENT PROGRAM?**
7	A.	DE-Ohio replaced 4,448 SHA risers in 2005 and 2,124 SHA risers in 2006 under
8		the Riser Optimization Program. Based on our current inventory of SHA risers
9		and our current rate of replacement, it would take us approximately 27 years to
10		replace all of the existing SHA risers.
11	Q.	**DOES DE-OHIO PLAN TO MAKE ANY CHANGES RELATING TO ITS**
12		**RISER REPLACEMENT PRACTICES?**
13	A.	DE-Ohio plans to accelerate its riser replacement program to complete SHA riser
14		replacement by 2015. This coincides with our schedule for completing the
15		AMRP. This will allow us to coordinate the work activity of our outside
16		contractors, and schedule the work more efficiently. This should reduce the
17		overall costs of the riser replacement program and minimize disruption and
18		outages for customers.
19	Q.	**WHAT APPROVALS DOES DE-OHIO REQUEST FROM THE**
20		**COMMISSION RELATING TO RISER REPLACEMENT?**
21	A.	DE-Ohio requests approval to recover riser replacement costs through Rider
22		AMRP. Riser replacement is similar to our AMRP in that both programs: (1)
23		involve substantial costs during the next several years; (2) will use the same

1   construction resources; and (3) will significantly improve the safety and reliability

2   of DE-Ohio's natural gas distribution system.

V.   OTHER MAJOR INFRASTRUCTURE INVESTMENTS

3 Q. **SINCE THE COMPANY'S LAST GENERAL GAS RATE CASE, HAS DE-**

4   **OHIO MADE OR PLANNED ANY MAJOR INVESTMENTS IN**

5   **INFRASTRUCTURE BESIDES THE AMRP?**

6 A. Yes. In 2003, DE-Ohio constructed the C314 major distribution pipeline. This

7   pipeline is a thirteen mile, twenty-four inch diameter, 720 psig steel pipeline. The

8   pipeline was constructed on the Warren and Butler County Line to enhance

9   system integrity. The C314 pipeline is maintained, operated and owned by DE-

10   Ohio and is connected to the Texas Gas Transmission System. This pipeline will

11   help avoid widespread outages and also helps the Company secure current and

12   future natural gas supplies for customers in the Greater Cincinnati region.

13   The second addition is the Bethel major distribution pipeline planned to be

14   constructed in 2008. This a seventeen mile, twelve-inch diameter, 650 psig

15   pipeline to be constructed from Foster, Kentucky to the east side of Bethel, Ohio.

16   This pipeline will be maintained, operated and owned by DE-Ohio and will be

17   connected to the KO Transmission System. The pre-construction activities are

18   currently underway, finalizing design, and obtaining permits and easements. This

19   proposed pipeline will function as a replacement for the existing pipeline crossing

20   the Little Miami River which, for safety and reliability reasons, must be taken out

21   of service due to the changing course of the river. In addition, the existing natural

22   gas pipelines cannot meet projected future demands within the design parameters.

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1   DE-Ohio requires this system improvement in order to provide natural gas to meet

2   customer demands.

VI.   INTEGRITY MANAGEMENT PROGRAM

3   Q.   **PLEASE EXPLAIN DE-OHIO'S INTEGRITY MANAGEMENT**

4   **PROGRAM.**

5   A.   DE-Ohio developed its Integrity Management Program in response to new federal

6   legislation in 2002, and accompanying regulations issued by the U.S. DOT OPS.

7   These new regulations require operators of hazardous liquid pipelines and natural

8   gas transmission pipelines to provide enhanced pipeline safety inspection and

9   testing activities for their facilities. The regulations require the hazardous liquid

10   pipeline and natural gas transmission pipeline operators to develop a program to

11   identify all heavily populated areas traversed by their pipelines; to develop a

12   baseline assessment plan; to conduct periodic risk assessments and to implement

13   certain maintenance procedures.

14   In response to the new law and regulations, DE-Ohio in 2004 developed

15   its Integrity Management Program, which is a comprehensive systematic

16   approach to maintain and improve safety of our hazardous liquid and transmission

17   pipeline system. The Integrity Management Program is comprised of five

18   separate plans – Integrity Management Plan, Performance Plan, Communication

19   Plan, Management of Change Plan, and Quality Control Plan – that provide the

20   foundation for the program and includes the processes and procedures necessary

21   to comply with the new law and regulations.

1   The ongoing integrity activities for 2007 include: identifying high

2   consequence areas; evaluating pipeline threats and conducting risk assessments

3   for each covered pipeline segment; identifying and implementing additional

4   preventive and mitigative measures; conducting integrity assessments through

5   pressure testing or direct assessment methods; and remediating conditions found

6   during integrity assessments.

VII.   INFORMATION REQUIREMENTS
SPONSORED BY WITNESS

7   Q.   **PLEASE DESCRIBE SUPPLEMENTAL FILING REQUIREMENT**

8   **(C)(13).**

9   A.   Supplemental Filing Requirement (C)(13) consists of maps of DE-Ohio's gas

10   distribution system. We have requested and received a waiver from the

11   Commission's filing requirements such that we are not required to file the maps

12   with our application, due to security concerns. Instead, we will make these maps

13   available for review in our offices, subject to appropriate confidentiality

14   agreements.

VIII.   CONCLUSION

15   Q.   **WAS SUPPLEMENTAL FILING REQUIREMENT (C)(13) OBTAINED**

16   **OR PREPARED BY YOU OR UNDER YOUR DIRECTION AND**

17   **CONTROL?**

18   A.   Yes.

19   Q.   **DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?**

20   A.   Yes.

Duke Energy Ohio--AMRP

Examples of Recent Price Increases

Description	2005	2006	2007	% Change 2005 vs. 2007
6" PL in Pavement--DP	$24.09	$30.07	$30.20	25.4%
8" PL in Pavement—DP	$29.53	$34.82	$34.94	18.3%
Asphalt/Concrete Base	$18.84	$22.55	$24.68	31.0%
Asphalt/Asphalt Base	$20.77	$22.50	$27.03	30.1%
Concrete Sidewalk	$58.50	$60.21	$64.42	10.1%

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In The Matter of the Application of Duke Energy Ohio, Inc. for an Increase in Gas Rates	))))	Case No. 07-589-GA-AIR
In the Matter of the Application of Duke Energy Ohio, Inc. for Approval of an Alternative Rate Plan for its Gas Distribution Service	))))))	Case No. 07-590-GA-ALT
In the Matter of the Application of Duke Energy Ohio, Inc. for Approval to Change Accounting Methods	)))	Case No. 07-591-GA-AAM

DIRECT TESTIMONY OF

SANDRA P. MEYER

ON BEHALF OF

DUKE ENERGY OHIO, INC.

__x__	Management policies, practices, and organization
_____	Operating income
_____	Rate Base
_____	Allocations
_____	Rate of return
_____	Rates and tariffs
__x__	Other: overview of case; alternative rate plan

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BEFORE

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DUKE ENERGY OHIO, INC.

INDEX

Testimony providing case overview and management polices, practices and organization.

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1   Q.   **PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2   A.   My name is Sandra P. Meyer, and my business address is 139 East Fourth Street,

3   Cincinnati, Ohio 45202.

4   Q.   **BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

5   A.   I am employed by the Duke Energy Corporation ("Duke Energy") affiliated

6   companies as President of Duke Energy Ohio, Inc. ("DE-Ohio") and its

7   subsidiary, Duke Energy Kentucky, Inc. ("DE-Kentucky").

8   Q.   **PLEASE SUMMARIZE YOUR EDUCATION AND PROFESSIONAL**

9   **QUALIFICATIONS.**

10   A.   I earned a Bachelor of Science degree in Accounting from Louisiana State

11   University. I have completed Harvard University's Advanced Management

12   Program. I am a certified public accountant in North Carolina and Texas. I am a

13   member of the North Carolina Associations of Certified Public Accountants and

14   the American Institute of Certified Public Accountants. I have served as advisory

15   director of the Houston Chapter of the Texas Society of Certified Public

16   Accountants. I am also a past regional director and past president of the Charlotte

17   and Houston Chapters of Financial Executives International, a professional

18   society of chief financial officers and other financial executives.

19   Q.   **PLEASE SUMMARIZE YOUR WORK EXPERIENCE.**

20   A.   I joined Texas Eastern Corporation ("Texas Eastern") in 1976 as a junior

21   accountant. I held positions of increasing responsibility with Texas Eastern and

22   its successor, PanEnergy Corp. ("PanEnergy"). I was elected vice president and

1   controller of PanEnergy in 1994, and I was named to the additional position of

2   treasurer in 1996. Following the 1997 merger of Duke Energy and PanEnergy, I

3   held various financial leadership positions with Duke Energy until 2001, when I

4   was named senior vice president of retail services. In 2003, I became group vice

5   president of customer service, sales and marketing for Duke Power, a business

6   unit of Duke Energy. I was named to my current position in April 2006.

7   Q.   **PLEASE DESCRIBE YOUR RESPONSIBILITIES AS PRESIDENT OF**

8   **DE-OHIO.**

9   A.   As President of DE-Ohio, I am responsible for ensuring that our customers

10   continue to have access to safe, reliable, and reasonably priced gas and electric

11   service, and that these services are provided in accordance with applicable federal

12   and state laws and regulations.

13   Q.   **WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**

14   **PROCEEDING?**

15   A.   My testimony provides an overview of DE-Ohio's gas business operations. I next

16   discuss the Company's major developments since its last retail gas base rate case

17   in 2001.

18   I explain our need for an increase in our base rates for gas service. I

19   discuss how the timely and constructive regulatory treatment we seek from the

20   Commission will enable us to continue our high levels of customer satisfaction by

21   providing our customers with the reasonably priced, reliable service they have

22   come to expect from us.

1   I describe DE-Ohio's proposal in this proceeding relating to continuation

2   of the tracking mechanism that allows us to recover costs of our Accelerated Main

3   Replacement Program ("AMRP") on a timely basis. I discuss our proposal to

4   broaden the tracking mechanism to include riser replacement costs. I also explain

5   our proposal to take ownership of the curb-to-meter portion of the service lines,

6   which are currently owned by customers. I introduce our proposal for a tracking

7   mechanism to recover costs related to our Utility of the Future initiative and

8   discuss our Alternative Regulation Plan. Additionally, I sponsor Schedules S-3,

9   S-4.1 and S-4.2, and Supplemental Filing Requirement (C)(17).

II.   DE-OHIO'S GAS BUSINESS

10   A.   OVERVIEW

11   Q.   PLEASE GIVE AN OVERVIEW OF DE-OHIO'S GAS BUSINESS.

12   A.   DE-Ohio is a utility that sells and transports natural gas, in addition to its electric

13   operations. DE-Ohio is headquartered in Cincinnati, Ohio, with additional Gas

14   Operations locations in Green Township (Monfort Heights), Monroe Township

15   (Todhunter), Miami Township (Little Miami), Sharonville (Glendale), and

16   Cincinnati (Eastern Avenue). From these local facilities, DE-Ohio directs the

17   planning, construction, operation and maintenance of its gas delivery system.

18   DE-Ohio's Gas Operations are more fully described in the testimony of Ms.

19   Patricia Walker. DE-Ohio provides gas delivery service to approximately

20   424,000 customers in southwest Ohio.

21   B.   ECONOMIC DEVELOPMENT

1 Q. **PLEASE DESCRIBE DE-OHIO'S ECONOMIC DEVELOPMENT**

2 **ACTIVITIES.**

3 A. DE-Ohio's longstanding support for state and local economic development

4 efforts, combined with DE-Ohio's reasonably priced rates, have resulted in a

5 number of Ohio economic development successes in which we have played a part.

6 For the last six years, Duke Energy has been named as one of the "Top 10

7 Best" utility economic development programs by *Site Selection* magazine. Even

8 more important to us, our surveys of local economic development officials

9 indicate that they are highly satisfied with DE-Ohio's economic development

10 efforts and services.

11 We estimate that our cooperative efforts, along with state and local

12 economic development officials, have contributed to the creation of over 34,000

13 Ohio jobs and more than $5 billion of capital investment in Ohio since 1996.

14 C. **CHARITABLE GIVING**

15 Q. **PLEASE DESCRIBE DE-OHIO'S CHARITABLE GIVING**

16 **PHILOSOPHY.**

17 A. DE-Ohio has made good corporate citizenship a priority by giving back to the

18 communities we serve. Since 1996, our philanthropic affiliate, The Duke Energy

19 Foundation, and its local predecessor, the Cinergy Foundation, contributed over

20 $37 million to Ohio charitable organizations in the communities we serve. We

21 strongly encourage a spirit of volunteerism among our employees, who contribute

22 countless hours of volunteer time to support the many communities in which they

23 live and work. At the heart of Duke Energy's volunteer efforts is the Global

1		Service Event, a corporate-wide focused volunteer effort that encourages
2		employees to give back to their communities, not just during the event, but year-
3		round. During the 2007 Global Service Event, 510 volunteer projects, involving
4		over 14,000 hours of volunteer time and benefiting over 370 non-profit
5		organizations, were performed by more than 5,000 Duke Energy employees and
6		retirees worldwide. Duke Energy also provided $144,000 in Volunteer Grants to
7		help fund these projects. The DE-Ohio portion of our Global Service Event
8		involved 156 volunteer projects performed by more than 1,500 employees, their
9		families and retirees. DE-Ohio also supports HeatShare, a program designed to
10		help those in need of heating bill assistance.
11		**D. CUSTOMER SERVICE CHANNELS**
12	**Q.**	**PLEASE DESCRIBE DE-OHIO'S CUSTOMER SERVICE ACTIVITIES.**
13	**A.**	DE-Ohio provides customers a variety of convenient methods to do business with
14		us. DE-Ohio strives to contain its customer service costs by using new
15		technology and new customer service channels. DE-Ohio's customer service
16		channels include:
17		• *Contact Centers* – Duke Energy Midwest (covering Ohio, Kentucky and
18		Indiana) staffs five contact centers (two for Customer Service, two for
19		New Service Contacts and one for small- to medium-size business
20		customers) with over 250 employees. In addition, we partner with ERS
21		Solutions to handle our Credit and a portion of our Customer Service call
22		volume. They have centers in Atlanta, Georgia and Montgomery,

1   Alabama. Combined, these centers handle four million customer contacts

2   per year, including telephone calls, e-mails, and faxes.

3   • *Business Service Center* – Our Business Service Center provides customer

4   service and communications to our larger commercial and industrial

5   customers and our governmental customers. The Business Service Center

6   is staffed by skilled personnel with many years of quality field experience

7   who respond to customers via telephone, e-mail, and fax. Additionally,

8   DE-Ohio provides Customer Relationship Managers and Technical

9   Service Engineers who meet with these customers in person as needed.

10   • *Pay Agents* – Pay agents are local authorized retailers or agents that accept

11   DE-Ohio bill payments and transmit the data to our billing system on a

12   daily basis. Our 41 DE-Ohio pay locations allow customers to pay their

13   bills at conveniently located businesses, many of which have extended

14   hours.

15   • *Automated Phone Service* – This service allows customers to access

16   information regarding their gas and/or electric service accounts from any

17   touchtone telephone, 24 hours a day, seven days a week. Via Automated

18   Phone Service, customers can check the amount and due date of their

19   current bill, verify the amount and date of their last payment, confirm the

20   amount and due date to prevent disconnection for non-payment, pay by

21   phone, make payment arrangements, or report a service outage. In 2006,

22   Duke Energy's Midwest self-service, Interactive Voice Response handled

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1 approximately 481,000 customer contacts – representing 19.3% of total

2 call volume.

3 • *Online Services* – Via our Web site, customers have the freedom to

4 manage their gas and/or electric service accounts from any computer with

5 Internet access – 24 hours a day, seven days a week. With our Online

6 Services, customers can view and pay their bills, check the amount and

7 due date of a current bill, access billing and usage history, turn on or turn

8 off service, enroll in our Budget Billing Program, report an electric power

9 outage, submit meter reads, view meter reading schedules, and more. DE-

10 Ohio customers use Online Services as a way to manage their gas and/or

11 electric accounts online. As of December 31, 2006, we have

12 approximately 280,000 DE-Ohio and DE-Kentucky customers who have

13 established online accounts. This represents a 195% increase from the

14 number of Ohio and Kentucky customers with online accounts as of

15 December 2003. On average, Duke Energy Midwest has approximately

16 150,000 customers that visit Online Services on a monthly basis (a 206%

17 increase from 2003).

18 • *Duke-Energy.com* – Our website provides customers with useful and

19 timely information, such as how to manage bills during the heating and

20 cooling seasons, how to be safe around gas and electricity, information

21 about rate tariffs, and information about our AMRP, which includes

22 program information, street listings, contact information and construction

23 maps. Customers may also perform online energy audits; identify ways to

1   conserve energy; view the "Storm Center" to see the locations and number

2   of electric outages during severe weather; submit online requests for tree

3   trimming; and report street light outages.

4   •   *Customer Service Office* – DE-Ohio customers who wish to do business in

5   person with a DE-Ohio representative can visit our office located at 644

6   Linn Street, Cincinnati, Ohio 45203. This location is accessible to all

7   customers in the DE-Ohio service area because it is in a core area where

8   public transportation is available.

9   E.   **BILL MANAGEMENT AND BILL PAYMENT OPTIONS**

10   Q.   **PLEASE GIVE AN OVERVIEW OF DE-OHIO'S BILL MANAGEMENT**

11   **AND BILL PAYMENT PROGRAMS.**

12   A.   DE-Ohio offers several optional bill management programs, designed to meet our

13   customers' varied needs:

14   •   *Budget Billing Program* – This program helps customers manage their

15   monthly energy costs by setting a monthly billing amount based on an

16   average annual cost. Under the "Quarterly" Budget Billing plan, we

17   review the customer's account every three months and adjust the Budget

18   Billing amount to better reflect the actual energy use. This allows

19   customers to avoid a twelfth month bill adjustment. Under the "Annual"

20   Budget Billing plan, the customer's monthly payments remain the same

21   each month, and in the twelfth month, the customer is billed or credited

22   for any difference between actual usage and the total amount paid during

23   the Budget Billing year. During the sixth month of the Annual plan, we

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1		review the customer's account and notify them with a bill message if the
2		current Budget Billing amount needs to be adjusted up or down. The
3		customer can notify us if they wish to change their Budget Billing amount
4		at any time.
5	•	*Adjusted Due Date* – This plan allows eligible customers to extend their
6		normal billing due date up to ten days from their original due date. This
7		enables customers to better align their due date with the date they receive
8		their paycheck, pension, Social Security check, *etc.*
9	•	*Extended Payment Agreements* – DE-Ohio offers extended payment plans
10		to eligible customers who are having difficulty paying their entire bill by
11		the due date. Customers may be eligible for a six-month agreement, the
12		One-Third Payment Plan, or a Combination Agreement and Budget
13		Billing plan.
14	•	*Heatshare* – This energy assistance program is available to eligible DE-
15		Ohio customers who need financial assistance with their gas and/or
16		electric bill and is independently administered by The Salvation Army.
17		Eligibility is based upon need and does not necessarily follow government
18		assistance guidelines. Eligible customers can receive up to $300 in
19		assistance, and in some cases more, for their utility bill. Heatshare is
20		completely funded by DE-Ohio employees, customers, and shareholders.
21		For 2006, DE-Ohio provided a $100,000 lump sum contribution and is
22		matching $1.00 for every $2.00 donated, up to an additional $100,000,
23		providing for total funding of up to $200,000.

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1   DE-Ohio also offers a number of bill payment options for customers, in

2   addition to the traditional bill payment option via U.S. mail:

3   • *BillPayer2000* – This program allows customers to have their bill

4   payments automatically deducted from their checking account. A nominal

5   transaction fee is assessed by the third-party vendor for this program.

6   • *Speedpay* – This program allows customers to make payments by

7   electronic check or credit/debit card over the telephone or via the Internet.

8   The third-party vendor charges a transaction fee for this program.

9   • *e-Bill* – This free online electronic payment option allows DE-Ohio

10 customers to view and pay their gas and/or electric bills online. e-Bill

11 offers two payment options: AutoPay (payments are automatically paid

12 each month on the due date) and Pay Online (customers authorize bill

13 payments online each month). All customer payments are electronically

14 deducted from their personal checking account and/or money market

15 account. DE-Ohio currently has 81,937 accounts enrolled in e-Bill.

16 F. **CUSTOMER SATISFACTION**

17 Q. **HOW DOES DE-OHIO MEASURE ITS PERFORMANCE FOR**

18 **PROVIDING HIGH QUALITY CUSTOMER SERVICE?**

19 A. DE-Ohio strives to provide high quality customer service. Cinergy received the

20 distinction by J.D. Power and Associates ("J.D. Power") in 2005 as the first utility

21 in the nation to receive Call Center Certification. This is an outstanding

22 achievement, given the rigorous internal audit, as well as the many detailed

1   customer surveys which were conducted by J.D. Power. All of Duke Energy's

2   call centers were successfully certified in 2006.

3   We measure our customer satisfaction performance through two primary

4   measurement tools: the J.D. Power annual gas utility residential customer

5   satisfaction studies and our own survey of residential customers who have

6   recently interacted with DE-Ohio.

7   **J.D. POWER STUDIES**

8   J.D. Power is well known for setting the standard for measurement of

9   consumer opinion and customer satisfaction in many key industries. J.D. Power

10   annually surveys gas utilities' residential customer satisfaction. Duke Energy

11   participates in these annual studies and the results show that Duke Energy

12   consistently provides high quality customer service.

13   The J.D. Power gas utility residential customer satisfaction study,

14   established in 2002, calculates overall customer satisfaction based on six

15   performance areas: (1) company image; (2) communications; (3) price and value;

16   (4) billing and payment; (5) customer service; and (6) field service. For 2006, the

17   most recent study for which results are available, J.D. Power measured residential

18   customer satisfaction for the country's 56 largest gas utilities, serving over 49

19   million customers.   Since our first year of participation, our scores have

20   outperformed the industry average.

21   **DE-OHIO – SPECIFIC CUSTOMER SURVEYS**

22   In addition to the independent J.D. Power studies, our internal customer

23   satisfaction measurements continue to reflect strong performance in meeting the

1   needs of DE-Ohio customers. We regularly survey residential customers who

2   have had a recent service contact with DE-Ohio. These surveys are conducted

3   throughout the year by an independent research firm.

4   Five key processes are measured by these surveys, reflecting the majority

5   of interactions customers have with DE-Ohio: (1) billing issues (billing inquiries,

6   billing complaints, *etc.*); (2) office bill payments (payments made over the

7   counter at a DE-Ohio customer service office); (3) turn on/turn off requests

8   (requests for initiation, transfer, or termination of service); (4) service failure

9   (outages and emergency situations); and (5) miscellaneous service requests

10   (service requests of a non-emergency nature).

11   Customers who had a recent contact in one of these five process areas are

12   randomly sampled, by means of a mail survey within ten days of their contact

13   with DE-Ohio. Since 2002, we have accumulated over 11,700 DE-Ohio survey

14   responses. These responses represent the "voice" of our DE-Ohio customers and

15   enable us to continue to improve customer satisfaction in each of the key

16   processes included in the survey.

17   DE-Ohio's customer satisfaction scores indicate that overall customer

18   satisfaction is high – in 2006, customers provided the following ratings:

19   •   billing issues: 70% of responding customers were "satisfied" or "very

20   satisfied;"

21   •   office bill payments: 85% of responding customers were "satisfied" or

22   "very satisfied;"

1 • turn on/turn off requests: 86% of responding customers were "satisfied" or

2 "very satisfied;"

3 • service failure:82% of responding customers were "satisfied" or "very

4 satisfied;" and

5 • miscellaneous service requests: 85% of responding customers were

6 "satisfied" or "very satisfied."

III. MAJOR DEVELOPMENTS SINCE 2001

7 Q. WHAT MAJOR DEVELOPMENTS INVOLVING DUKE ENERGY HAVE

8 AFFECTED DE-OHIO'S GAS BUSINESS SINCE ITS LAST GAS BASE

9 RATE CASE IN 2001?

10 A. DE-Ohio's parent, Cinergy Corp., ("Cinergy") merged with Duke Energy in 2006.

11 The Commission approved the merger in Case No. 05-732-EL-MER, and

12 approved changes in accounting procedures related to the merger in Case No. 05-

13 733-EL-AAM and 05-974-GA-AAM. More recently, Duke Energy has embarked

14 on a "Utility of the Future" initiative to install a state-of-the-art communications

15 network, along with smart meters, for its entire gas and electric distribution

16 infrastructure. I discuss these developments in more detail below. I will not

17 discuss the developments that impact only our electric operations, as this is

18 outside the scope of the present case. Ms. Patty Walker discusses the major

19 developments involving only DE-Ohio's Gas Operations business.

20 Q. PLEASE DISCUSS THE 2006 MERGER BETWEEN CINERGY CORP.

21 AND DUKE ENERGY.

1   A.   Last year's merger joined DE-Ohio to a well-managed, financially strong

2   company with a reputation for excellence. DE-Ohio was formerly known as The

3   Cincinnati Gas & Electric Company ("CG&E"). In 2006, Cinergy Corp., the

4   holding company for CG&E, merged with Duke Energy to form a new

5   corporation, which was later named Duke Energy Corporation (the name of the

6   former Duke Energy Corporation was changed to Duke Energy Carolinas, LLC).

7   CG&E's name was later changed to DE-Ohio. DE-Ohio has realized, and will

8   continue to realize, operational efficiencies from the 2006 merger between Duke

9   Energy and Cinergy, while continuing to provide reliable, cost-effective service.

10   The merger has provided, and will continue to provide, the following benefits:

11   • increased financial strength and flexibility;

12   • stronger utility business platform;

13   • greater scale and fuel diversity;

14   • broadened electric distribution platform;

15   • improved reliability and customer service through the sharing of best

16   practices;

17   • increased scale and scope of the electric and gas businesses with stand-

18   alone strength;

19   • complementary electric positions in the southeast;

20   • greater customer diversity;

21   • combined expertise; and

22   • significant cost savings synergies.

23   Q.   **PLEASE DISCUSS THE UTILITY OF THE FUTURE PROJECT.**

1   A.   Duke Energy's five operating utility companies, including DE-Ohio, plan to

2   install advanced communications equipment and smart meters throughout its gas

3   and electric delivery system. The Company has been studying this matter for

4   quite some time, and plans to move forward with deploying this advanced system.

5   Indeed, in DE-Ohio's 2001 gas rate case, the Company committed to prepare

6   annual reports discussing the state of automated metering technology.

7   DE-Ohio's advanced communications and metering network will enable

8   the Company to monitor customers' gas and electric usage on a frequent and

9   timely basis. This technology will provide many benefits, including allowing the

10   Company to access meter data much more easily. This has been a long-standing

11   concern because many of our customers' meters are inside meters, which can be

12   difficult to access. Mr. David Mohler discusses the Utility of the Future initiative

13   in more detail.

IV.   COMPANY'S NEED FOR PROPOSED RATE INCREASE AND PROPOSED COST RECOVERY MECHANISMS

14   Q.   **PLEASE EXPLAIN WHY DE-OHIO PROPOSES TO INCREASE ITS**

15   **RETAIL GAS RATES.**

16   A.   The Company proposes new rates because our present rates, which reflect our

17   cost of service from 2001, are insufficient to cover our current costs of service.

18   DE-Ohio has also been recovering costs for AMRP-related plant through Rider

19   AMRP, except that the rider contains certain rate caps that have prevented the

20   Company from fully recovering these costs. DE-Ohio also seeks to include in

21   rates the costs for its continued investment in its distribution facilities needed to

22   provide reliable service for Ohio customers. DE-Ohio has experienced a decline

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1   in throughput volume and therefore revenues have not offset these increased

2   costs.   These factors compel the Company to propose new rates in this

3   proceeding.

4   Q.   **PLEASE GENERALLY DESCRIBE DE-OHIO'S PROPOSED RATE**

5   **INCREASE.**

6   A.   DE-Ohio proposes to increase its gas base rates so as to increase its annual

7   revenues for its gas business by approximately $34.1 million. This represents an

8   average aggregate base rate increase of approximately 5.71% over the rates

9   currently in effect. This rate increase is necessary to allow DE-Ohio to recover its

10   costs for providing reliable gas service, plus a fair return on its investment in its

11   gas distribution facilities.

12   Q.   **HOW HAVE DE-OHIO'S COSTS INCREASED AS COMPARED TO THE**

13   **AMOUNTS CURRENTLY REFLECTED IN RATES?**

14   A.   Since its last general gas rate case, Duke Energy Ohio has made substantial

15   capital investments in its local distribution system. The date certain in that case

16   was March 31, 2001. From that date through March 31, 2007, the date certain in

17   the current case, these system investments totaled approximately $425 million, net

18   of retirements, above the level currently reflected in rates.   Additionally, the

19   Company seeks to roll-in its Rider AMRP revenue requirement into base rates,

20   and re-set Rider AMRP to zero. The Company did not recover all of its Rider

21   AMRP revenue requirement through Rider AMRP because Rider AMRP was

22   subject to certain rate caps. DE-Ohio also seeks to roll-in the investment which

23   was not recovered through Rider AMRP, into rate base. The drivers for the

1 Company's requested rate increase are described in more detail in the testimony

2 of Mr. Paul Smith.

3 Q. **WHAT DOES DE-OHIO PROPOSE FOR RIDER AMRP?**

4 A. The Commission's Order in the 2001 rate case allowed DE-Ohio to obtain annual

5 increases in Rider AMRP through 2007. The Company requests that the

6 Commission re-approve Rider AMRP to enable the Company to complete the

7 program without adverse financial impacts from regulatory lag. This will allow

8 customers to continue reaping benefits from the program.

9 DE-Ohio proposes three changes relating to Rider AMRP. First, the

10 Company proposes to recover riser-related costs through Rider AMRP. This will

11 allow the Company to accelerate its riser replacement program to coincide with

12 completion of the AMRP. This will produce operational efficiencies by allowing

13 the Company to synchronize the riser work with the AMRP work, and will

14 produce safety benefits by eliminating risers that are more prone to leaks under

15 certain conditions while minimizing disruption of service and inconvenience to

16 the customer.

17 Second, the Company proposes to assume ownership of the curb-to-meter

18 portion of the service lines, including risers, when they are installed or replaced in

19 the future. This will allow the Company to control when the service line,

20 including the riser, is replaced. This too will result in public safety benefits and

21 operating efficiencies.

22 Third, DE-Ohio proposes to eliminate the Rider AMRP rate caps that have

23 prevented the Company from fully recovering the Rider AMRP revenue

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1   requirement from its customers through the annual Rider AMRP cases. Mr. Gary

2   Hebbeler and Mr. Don Wathen explain these Rider AMRP changes in more detail.

3 Q. **DOES THE COMPANY PROPOSE ANY NEW COST RECOVERY**

4   **MECHANISM FOR COSTS RELATED TO THE UTILITY OF THE**

5   **FUTURE PROJECT?**

6 A. Yes. The Company proposes to implement a new cost recovery mechanism to

7   track and recover Utility of the Future costs. The Company plans to make a

8   substantial investment in its distribution system over the next several years to

9   install the advanced communications and smart metering equipment to enable the

10   Utility of the Future project. We request approval of Rider Advanced Utility

11   ("Rider AU") to allow the Company to recover these costs on a timely basis. This

12   will enable DE-Ohio to avoid the regulatory lag, and associated financial harm,

13   related to these investments. This will also allow us to avoid filing multiple rate

14   cases that may delay investments and benefits to customers. Mr. David Mohler

15   discusses this proposal in more detail.

16 Q. **DOES THE COMPANY PROPOSE ANY RATE DESIGN CHANGES?**

17 A. Yes. DE-Ohio requests approval to implement a revenue decoupling mechanism.

18   We currently recover a substantial portion of our revenues based on the volumes

19   of gas our customers consume. We propose to change our delivery rates to

20   recover our delivery costs through fixed charges and our commodity costs

21   through variable, volumetric charges. This will provide us with a better

22   opportunity to recover our costs, and will also remove any disincentive to

1   introducing new conservation programs. Mr. Don Storck discusses our revenue

2   decoupling proposal in more detail.

V.   ALTERNATIVE REGULATION PLAN

3 Q. **PLEASE EXPLAIN THE PURPOSE OF THE COMPANY'S**

4   **ALTERNATIVE REGULATION PLAN.**

5 A. The Alternative Regulation Plan consists of the Company's proposals to continue

6   Rider AMRP, and to implement Rider AU and the revenue decoupling

7   mechanism. DE-Ohio filed the Alternative Regulation Plan as an option to

8   request Commission approval for the tracking mechanisms and the revenue

9   decoupling proposals in the base rate case. The Company requests that the

10   Commission approve these proposals in both the base rate case and the

11   Alternative Regulation Plan case. If the Commission approves these proposals in

12   both cases, DE-Ohio will elect whether to proceed with the Alternative

13   Regulation Plan. DE-Ohio's purpose in asking the Commission to review these

14   proposals in both proceedings is to give the Commission and the Company some

15   flexibility in how the programs are approved and administered.

16 Q. **PLEASE DIRECT YOUR ATTENTION TO THE COMMISSION'S**

17   **REQUIREMENTS FOR ALTERNATIVE REGULATION PLANS. DO**

18   **YOU   HAVE   AN   OPINION   AS   TO   WHETHER   DE-OHIO'S**

19   **ALTERNATIVE REGULATION PLAN COMPLIES WITH OAC 4901:1-**

20   **19-05(C)(2)(G) AND R.C. 4905.35?**

21 A. Yes.

22 Q. **PLEASE STATE YOUR OPINION.**

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1   A.   I have been advised by Company counsel that these requirements prohibit public

2   utility companies from making or giving any undue advantage or causing undue

3   or unreasonable prejudice or disadvantage to any person, firm, corporation or

4   locality. DE-Ohio's Plan complies with these requirements because DE-Ohio

5   operates an integrated distribution system and the cast iron and bare steel mains

6   that DE-Ohio will replace are located throughout the system. DE-Ohio will

7   replace the mains in an efficient manner, with due consideration for replacing

8   mains with a higher risk for potential incidents more promptly than mains that do

9   not present such risk. Customers will pay for the cost of the program on a

10   system-wide basis. Likewise, customers will share the benefits of enhanced

11   safety, and reliability as well as reduced maintenance expense and line losses on a

12   system-wide basis. DE-Ohio's revenue decoupling proposal should benefit all

13   stakeholders by providing the Company a better opportunity to recover its costs of

14   service, thus avoiding the need for repeated rate case filings. Mr. Paul Smith's

15   testimony addresses how DE-Ohio's Alternative Regulation Plan fulfills the state

16   policy goals set forth in R.C. 4929.02.

17   Q.   **PURSUANT TO OAC 4901:1-19-05(C)(3), PLEASE STATE THE**

18   **COMMITMENTS TO CUSTOMERS THAT DE-OHIO WILL MAKE,**

19   **THROUGH ITS ALTERNATIVE REGULATION PLAN, TO PROMOTE**

20   **THE STATE POLICY GOALS SET FORTH IN R.C. 4929.02.**

21   A.   First, DE-Ohio commits to customers that the leak rate on its distribution system

22   will improve after the remaining cast iron and bare steel mains, of twelve-inch

23   diameter and less, are replaced. Second, DE-Ohio commits to customers that the

1   remaining cast iron and bare steel main replacement will result in enhanced safety

2   and reliability. Third, DE-Ohio commits to customers that maintenance savings

3   relating to its gas distribution system will continue during the remaining AMRP

4   and that DE-Ohio will pass these savings on to customers on an annual basis

5   through adjustments in Rider AMRP.

6 Q. OHIO ADMINISTRATIVE CODE 4901:1-19-05(C)(3) STATES THAT THE

7   EXTENT OF COMMITMENT THAT AN APPLICANT MUST MAKE

8   SHOULD RELATE TO THE DEGREE OF FREEDOM THAT THE

9   APPLICANT SEEKS FROM TRADITIONAL RATEMAKING. TO

10   WHAT EXTENT DOES DE-OHIO SEEK FREEDOM FROM

11   TRADITIONAL RATEMAKING IN THIS PROCEEDING?

12 A. Importantly, DE-Ohio has not applied under R.C. 4929.04 to seek to exempt any

13   regulated utility service, including commodity sales service or any type of

14   ancillary service, from traditional Commission regulation. The Commission

15   traditionally establishes rates through the process of a general base rate case. In

16   this filing, DE-Ohio requests re-approval of Rider AMRP as a process by which

17   the Commission will adjust DE-Ohio's rates annually based on the additional

18   plant in service resulting from DE-Ohio's AMRP, offset by the maintenance

19   savings resulting from such program. In this annual review process, Staff and

20   intervening parties will continue to have the right to review and object to the costs

21   that DE-Ohio proposes to recover through Rider AMRP. The parties have a right

22   to a hearing on the proper amount of cost recovery. The amount of the annual

23   adjustment to Rider AMRP will ultimately be established by Commission order.

1 By adjusting Rider AMRP for maintenance savings, DE-Ohio is matching the cost

2 savings resulting from the main replacement directly to the increased cost of

3 replacing the mains. Thus, unlike a market-based rate proposal, Rider AMRP

4 provides for the recovery of costs actually incurred for providing safe, reliable

5 utility service, consistent with traditional ratemaking principles.

6 Q. **PLEASE PROVIDE MORE INFORMATION ON THE COMMITMENT**

7 **TO CUSTOMERS REGARDING THE MAINTENANCE SAVINGS THAT**

8 **WILL BE REALIZED THROUGH RIDER AMRP.**

9 A. DE-Ohio commits to its customers that it will continue to realize maintenance

10 savings from the AMRP and that these savings will be passed along to customers

11 through the annual adjustment to Rider AMRP. To date, the AMRP has resulted

12 in $8.5 million in maintenance savings, which the Company has passed along to

13 customers through Rider AMRP. The remaining projected maintenance savings

14 are estimated at $6.6 million, as set forth in Mr. Don Wathen's testimony.

15 Q. **HOW WILL THIS PROMOTE THE STATE POLICIES SET FORTH IN**

16 **R.C. 4929.02?**

17 A. This will enable DE-Ohio to provide safer and more reliable service to its

18 customers. This will provide for a more integrated system enabling DE-Ohio to

19 operate its distribution system at higher operating pressures. DE-Ohio's proposal

20 promotes the provision of safe, reliable and reasonably-priced service. The

21 replacement of the remaining twelve-inch and less cast iron and bare steel pipe,

22 for obvious reasons, enhances our ability to provide safe and reliable service for

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1   our customers, and the tracking mechanism allows customers to realize the

2   maintenance savings on a real-time basis.

3 Q. **WHAT ADDITIONAL COMMITMENTS WILL DE-OHIO MAKE TO**

4   **CUSTOMERS IN CONNECTION WITH ITS ALTERNATIVE RATE**

5   **PLAN?**

6 A. DE-Ohio will commit to provide a weatherization program to its low-income

7   residential customers and to assist those in need with their winter heating bills.

8 Q. **HOW WILL DE-OHIO ASSIST THOSE IN NEED WITH THEIR WINTER**

9   **HEATING BILLS?**

10 A. DE-Ohio sponsors the HeatShare program, which is administered by the Salvation

11   Army. Eligible customers facing disconnection of service receive assistance in

12   paying their winter heating bills. Shareholders of Duke-Energy contribute $1.00

13   for every $2.00 donated by customers or employees to the HeatShare program, up

14   to $100,000 per year. For 2006, DE-Ohio increased its funding level up to

15     $200,000 per year. In connection with this Alternative Regulation Plan, DE-Ohio

16   will continue through December 31, 2010 this increased level of funding,

17   donating $1.00 for every $2.00 in customer and employee contributions, up to a

18   limit of $200,000 per year.

19 Q. **HOW WILL DE-OHIO PROVIDE A WEATHERIZATION PROGRAM**

20   **TO ITS LOW-INCOME RESIDENTIAL CUSTOMERS?**

21 A. DE-Ohio funds a program designed to make the homes of its low-income

22   residential customers more energy efficient. The program also provides energy

23   education to these customers. Services under this program are provided by two

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1   agencies, People Working Cooperatively and Working In Neighborhoods. In

2   previous years, costs related to the weatherization program totaled approximately

3     $2 million per year. DE-Ohio committed $3 million to this program in 2006. In

4   connection with this Alternative Regulation Plan, DE-Ohio will commit to

5   continuing this program at the $3 million annual funding level through December

6   31, 2010. Mr. Wathen discusses the adjustment to the revenue requirement to

7   include this incremental $1 million to the $2 million of weatherization funding

8   that was originally budgeted for 2007.

9   Q.   **HOW WILL THIS PROMOTE THE STATE POLICIES SET FORTH IN**

10   **R.C. 4929.02?**

11   A.   These programs will make DE-Ohio's services more affordable for those

12   customers who are eligible for assistance under these programs.

13   Q.   **WHAT CURRENT COMMITMENTS WILL DE-OHIO EXTEND IN**

14   **CONNECTION WITH ITS ALTERNATIVE REGULATION PLAN?**

15   A.   DE-Ohio will extend its participation in the Customer Services Collaborative

16   ("CSC") through December 31, 2010. DE-Ohio meets quarterly through the CSC

17   with low-income consumer advocates, governmental agencies, social service

18   agencies, the Ohio Consumers' Counsel and Commission Staff to address

19   customer service concerns of low-income customers and to work on a

20   collaborative basis with these agencies. DE-Ohio also holds an annual customer

21   service workshop with these groups through the CSC. The CSC has enhanced

22   DE-Ohio's awareness of and ability to respond to the customer service concerns

23   of low-income customers. The CSC was formed as a result of DE-Ohio's 1995

1　　　gas rate case and is an ongoing commitment; however, DE-Ohio now commits to

2　　　extending this program through the end of 2010.

3　Q.　HOW WILL THIS PROMOTE THE STATE POLICIES SET FORTH IN

4　　　R.C. 4929.02?

5　A.　This will enhance DE-Ohio's ability to provide service for low-income customers,

6　　　consistent with the state policy goals.

VI.　SCHEDULES SPONSORED BY WITNESS

7　Q.　PLEASE DESCRIBE SCHEDULE S-3.

8　A.　Schedule S-3 is DE-Ohio's proposed newspaper notice, which informs the public

9　　　about this case. DE-Ohio requests that the Commission approve the form and

10　　　content of the newspaper notice. DE-Ohio will publish the newspaper notice

11　　　following Commission approval as to form and content.

12　Q.　PLEASE DESCRIBE SCHEDULE S-4.1.

13　A.　Schedule S-4.1 is an executive summary of the corporate processes followed by

14　　　the Company's board of directors and executive management team. This

15　　　executive summary generally describes our processes for: establishing and

16　　　achieving our policy objectives; communicating these objectives to our

17　　　stakeholders; organizing our management structure; decision-making processes

18　　　and how we implement corporate controls.

19　Q.　PLEASE DESCRIBE SCHEDULE S-4.2.

20　A.　Schedule S-4.2 is an executive summary of the Company's management policies,

21　　　practices and organization to attain corporate goals, and discusses our

22　　　management process in various functional areas.

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1 Q. **PLEASE DESCRIBE SUPPLEMENTAL FILING REQUIREMENT**

2 **(C)(17).**

3 A. Supplemental Filing Requirement (C)(17) is a copy of the advertisements for

4 which costs were charged to advertising expense during the actual months of the

5 test year financial data. I also sponsor the Company's estimated cost of the

6 advertisements that will be included in the budgeted portion of the test year.

VII. INTRODUCTION OF WITNESSES

7 Q. **PLEASE INTRODUCE THE OTHER DE-OHIO WITNESSES IN THIS**

8 **PROCEEDING, AND EXPLAIN THE SUBJECT MATTER OF THEIR**

9 **TESTIMONY.**

10 A. DE-Ohio will present testimony from the following witnesses:

11 **Patricia K. Walker**, Senior Vice President, Ohio and Kentucky Gas

12 Operations, will provide additional testimony regarding the operation of DE-

13 Ohio's gas business, and support the operation and maintenance data used in the

14 test period.

15 **Gary J. Hebbeler**, General Manager, Gas Engineering, will provide a

16 detailed status of DE-Ohio's AMRP, and support the continuation of Rider

17 AMRP. Additionally, he supports our request for tracker recovery of riser

18 replacement costs, and discusses our proposal to assume ownership of the curb-to-

19 meter portion of the service line. He also supports the capital expenditure data

20 used in the test period.

21 **David W. Mohler**, Vice President and Chief Technology Officer, will

22 discuss Duke Energy's Utility of the Future initiative, and will explain DE-Ohio's

1   proposal for approval of Rider Advanced Utility to track and timely recover the

2   costs associated with this initiative.

3   **Carl J. Council, Jr.**, Director, Asset Accounting, will sponsor certain

4   information related to DE-Ohio's plant accounting.

5   **John J. Spanos**, of Gannett Fleming, Inc., will sponsor DE-Ohio's latest

6   depreciation study.

7   **James A. Riddle**, Manager, Load Forecasting, will testify regarding

8   forecasting methodologies and supports the DE-Ohio gas sales used in the test

9   period data.

10   **Keith G. Butler**, Senior Vice President Tax, discusses DE-Ohio's tax

11 expense for the test period.

12   **Laura Gwen ("Gwen") Pate**, Director of General Accounting – Midwest,

13 discusses DE-Ohio's accounting processes and sponsors certain accounting

14 information used for the test period financial data;

15   **Brian P. Davey**, General Manager, Financial Planning and Analysis,

16 explains DE-Ohio's budgeting practices and sponsors certain budget data

17 presented with the test period financial data;

18   **Stephen De May**, General Manager, Corporate Finance and Assistant

19 Treasurer, discusses DE-Ohio's credit ratings, financial objectives, cash

20 requirements, and capital structure.

21   **Dr. Roger A. Morin**, an independent consultant, provides testimony on

22 DE-Ohio's requested return on equity.

1   **Donald L. Storck**, Director, Rate Services, sponsors DE-Ohio's cost of

2   service study and discusses our revenue decoupling proposal.

3   **James E. Ziolkowski**, Supervisor, Rates, provides testimony regarding

4   rate design and changes to DE-Ohio's rate schedules and other gas tariff

5   provisions.

6   **William Don ("Don") Wathen, Jr.**, Director, Revenue Requirements,

7   sponsors DE-Ohio's revenue requirements and certain adjustments to the test

8   period financial data; and

9   **Paul G. Smith**, Vice President, Ohio/Kentucky Rates, discusses the

10   Company's compliance with and requests for relief relating to the Commission's

11   orders in the Company's last gas base rate case. He will also discuss the drivers

12   for the Company's proposed rates.

VIII. CONCLUSION

13   **Q.**   **DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?**

14   **A.**   Yes.

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BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In The Matter of the Application of Duke Energy Ohio, Inc. for an Increase in Gas Rates	))))	Case No. 07-589-GA-AIR
In the Matter of the Application of Duke Energy Ohio, Inc. for Approval of an Alternative Rate Plan for its Gas Distribution Service	)))))	Case No. 07-590-GA-ALT
In the Matter of the Application of Duke Energy Ohio, Inc. for Approval to Change Accounting Methods	))))	Case No. 07-591-GA-AAM

DIRECT TESTIMONY OF

DAVID W. MOHLER

ON BEHALF OF

DUKE ENERGY OHIO, INC.

_____ Management policies, practices, and organization

_____ Operating income

_____ Rate Base

_____ Allocations

_____ Rate of return

_____ Rates and tariffs

___x___ Other: Utility of the Future Project; Rider AU – Advanced Utility

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In The Matter of the Application of	)	
Duke Energy Ohio, Inc. for an	)	Case No. 07-589-GA-AIR
Increase in Gas Rates	)	
	)	
In the Matter of the Application of	)	
Duke Energy Ohio, Inc. for Approval	)	Case No. 07-590-GA-ALT
of an Alternative Rate Plan for its	)	
Gas Distribution Service	)	
	)	
In the Matter of the Application of	)	
Duke Energy Ohio, Inc. for Approval	)	Case No. 07-591-GA-AAM
to Change Accounting Methods	)	

DIRECT TESTIMONY OF

DAVID W. MOHLER

ON BEHALF OF

DUKE ENERGY OHIO, INC.

INDEX

Testimony explaining Utility of the Future project and proposed Rider AU – Advanced Utility.

TABLE OF CONTENTS

I. INTRODUCTION

1 Q. **PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is David W. Mohler. My business address is 526 South Church Street,

3 Charlotte, North Carolina 28202.

4 Q. **BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

5 A. I am employed by the Duke Energy Corporation ("Duke Energy") affiliated companies as

6 Vice President and Chief Technology Officer.

7 Q. **PLEASE SUMMARIZE YOUR EDUCATION AND PROFESSIONAL**

8 **QUALIFICATIONS.**

9 A. I am a graduate of Indiana University with a Bachelor of Arts degree in Liberal Arts and

10 of the State University of New York at Albany with a Bachelor of Science degree in

11 Chemistry and Physics. I obtained a Masters of Science degree in Organizational

12 Dynamics from the University of Pennsylvania. I also obtained a Master of Arts degree

13 in Counseling from Xavier University.

14 Q. **PLEASE SUMMARIZE YOUR WORK EXPERIENCE.**

15 A. Between 1975 and 1997, I worked for four utility companies in a variety of technical,

16 supervisory, and management positions, including Generating Station Manager, General

17 Manager of Marketing and Demand-Side Services and Director of Business Development

18 and Corporate Marketing. Since 1997, I have worked for Duke Energy in general

19 management positions, including General Manager of Strategic Planning, General

20 Manager of Corporate Development and Vice President of Strategic Planning. I was

21 promoted to my current position in October 2006.

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1 Q. **PLEASE SUMMARIZE YOUR DUTIES AS VICE PRESIDENT AND CHIEF**

2 **TECHNOLOGY OFFICER.**

3 A. I am responsible for developing new and emerging technology applications for use in

4 Duke Energy's operations. I am also responsible integrating these new technologies into

5 Duke Energy's business plans, and monitoring the deployment of these new technologies.

6 Q. **WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

7 A. I explain Duke Energy's Utility of the Future Project and support Duke Energy Ohio,

8 Inc.'s ("DE-Ohio") proposed Rider AU – Advanced Utility ("Rider AU").

II. UTILITY OF THE FUTURE PROJECT

9 Q. **PLEASE EXPLAIN DUKE ENERGY'S UTILITY OF THE FUTURE PROJECT.**

10 A. The Utility of the Future project is Duke Energy's project to transform its gas and electric

11 transmission and distribution system into an integrated, digital network – much like a

12 computer network – to produce operating efficiencies, enhanced customer and utility

13 information and communications, innovative services, and other benefits. One

14 fundamental component of the Utility of the Future project is Advanced Metering

15 Infrastructure ("AMI"). AMI is a metering and communication system that records

16 customer usage data over frequent intervals, and transmits the data over an advanced

17 communication network to a centralized data management system. The usage data is

18 made available to the utility and customers on a frequent and timely basis. The Utility of

19 the Future project uses the communication network to carry data from AMI and other

20 intelligent devices on the distribution grid, creating a networked system and utilizing the

21 AMI to its greatest extent.

1   Q.   **HOW DOES DE-OHIO CURRENTLY OBTAIN GAS AND ELECTRIC METER**

2   **READINGS?**

3   A.   DE-Ohio currently obtains gas and electric meter readings through monthly meter

4   readings by meter readers; drive-by meter readings using automated meter reading

5   equipment; and meter readings submitted by customers by phone or through DE-Ohio's

6   website. Most meter readings are monthly meter readings by meter readers. DE-Ohio

7   uses 194 meter readers who walk routes once per month to read the meters. The meter

8   readers either automatically record, or manually key in, the usage data into a handheld

9   electronic storage device. The stored usage data is transmitted to DE-Ohio's billing

10   system daily.

11   One of the main challenges for DE-Ohio's meter reading operations is obtaining

12   access to inside meters located primarily in urban areas of DE-Ohio's service territory.

13   DE-Ohio maintains a "key room" containing over 60,000 keys to customers' homes,

14   where the customers voluntarily provided DE-Ohio with a keys to enter the customers'

15   homes to perform the monthly meter readings in case the customer is not at home when

16   the meter reader arrives. Most customers, however, refuse to give DE-Ohio a key to enter

17   their home or business. In such cases, if the meter reader cannot enter the home or

18   business to read the meter, DE-Ohio allows the customer to record the meter reading on a

19   postcard left at the premises; to enter the meter reading online; or to call the meter

20   reading into the Company's Call Center. Approximately 6% of residential bills are

21   estimated each month due to our inability to enter the customers' premises to read the

22   meter. This results in a significant number of Call Center calls, customer complaints and

23   costly off-cycle meter readings.

1 Q. HOW DO AMI METERING DEVICES WORK FOR GAS METERS?

2 A. The most common type of gas meter, used for nearly all residential and small commercial

3   customers, is a diaphragm meter. Gas flows through the meter's internal, movable

4   diaphragms continuously when gas is used. The diaphragms connect to mechanical

5   counters that record the volume of gas used on circular dials. An AMI metering device

6   for gas meters is a microprocessor installed "under-the-glass" of the meter. The

7   microprocessor scans the dials of the meters, and a telemetry device transmits the data

8   either over a fixed network, or wirelessly, using radio frequency.

9 Q. HOW IS THE METER DATA AUTOMATICALLY TRANSMITTED TO THE

10   UTILITY?

11 A. A variety of different communications technologies can be used to automatically transmit,

12   on a routine and exception basis, the meter data to the utility's data collection system:

13   fixed radio networks; fiber optic lines; power line carrier or broadband over power lines.

14   The data collection system feeds the data into the utility's meter data management

15   system. The meter data management system provides the usage data to the utility's other

16   information technology operating systems, such as the customer information, billing and

17   outage management systems.

18 Q. YOU STATED THAT AMI IS ONE COMPONENT OF DUKE ENERGY'S

19   UTILITY OF THE FUTURE PROJECT. PLEASE DESCRIBE THE OTHER

20   PROJECT COMPONENTS.

21 A. AMI is a key component of the Utility of the Future project. The Utility of the Future

22   project, however, is much broader than simply installing AMI. The Utility of the Future

23   project also involves: (1) automating the distribution system to enable the Company to

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1   monitor the actual condition of system components, and re-designing maintenance

2   programs based on such actual knowledge, rather than replacing equipment after it fails,

3   or attempting to predict when equipment might fail; (2) improved outage management

4   through more rapid detection of outages and faster service restoration; (3) enabling direct

5   load control programs that allow the utility to shave or shift usage; (4) communicating the

6   usage information to customers on a timely basis, and developing new

7   conservation/demand side management programs where customers can use the timely

8   usage information; and (5) providing the ability to expand communication channels from

9   the utility to the customer.

10   Q.   WHAT PROGRESS HAS DUKE ENERGY MADE TOWARD DEPLOYING THE

11   UTILITY OF THE FUTURE PROJECT?

12   A.   Duke Energy is currently engaged in pre-deployment activities, preparing for the full-

13   scale deployment of the Utility of the Future project. Duke Energy began these pre-

14   deployment activities in 2003 and the pre-deployment activities are accelerating as Duke

15   Energy has acquired experience with the technologies required for the Utility of the

16   Future project.

17   Prior to the Duke Energy/Cinergy Corp. ("Cinergy") merger, Cinergy's Cinergy

18   Broadband, LLC (now known as "Duke Energy Broadband, LLC") subsidiary entered

19   into a joint venture with Current Communications Group to offer broadband services to

20   residential consumers in the Cincinnati area. This service used broadband over power

21   lines ("BPL") technology. The service began in 2003 and was eventually deployed to a

22   dozen neighborhoods in the Greater Cincinnati area, and is available to approximately

23   55,000 homes. This was the first large-scale deployment of BPL in the U.S.

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1   Additionally, Duke Energy began a small-scale BPL deployment in Charlotte, North

2   Carolina in 2004 to utilize its communication capability for utility/customer

3   communications for approximately 6,500 customers. BPL technology is one option

4   available to Duke Energy for the communication link for the Utility of the Future project.

5   Duke Energy began the following deployments or expanded existing deployments

6   earlier this year, and also plans to continue deploying communication equipment and

7   smart endpoint devices:

8   • **Cincinnati, Ohio**: planning is underway for deployment of AMI/Utility of the

9   Future technologies, initially targeted at gaining operational efficiencies and

10   enhancing customer service for customers with inside-the-premise meters;

11   • **Charlotte, North Carolina**: the existing project, is being expanded by adding

12   AMI and other smart endpoints, along with distribution monitoring equipment;

13   and

14   • **Greenville, South Carolina**: we will begin deployment of utility

15   communications, AMI, and distribution monitoring equipment, with the objective

16   of testing: optimal deployment configurations for monitoring distribution

17   equipment and enhancing reliability.

18   Duke Energy is also involved in the following non-BPL AMI deployments:

19   • **Northern Kentucky**: Duke Energy Kentucky, Inc. ("DE-Kentucky") is deploying

20   AMI to its gas and electric customers using power line communications

21   technology. The Kentucky Public Service Commission authorized DE-Kentucky

22   to recover costs for AMI deployment through its base electric rates in Case No.

23   2006-00172. This deployment may be expanded to include remote disconnect

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1   devices, advanced endpoint devices, and enhanced communications and

2   information systems; and

3   • **Indiana**: we are evaluating future deployment of advanced communications

4   systems integrating various types of equipment and local area networks to

5   demonstrate Utility of the Future applications.

6   Q. HAS DUKE ENERGY DEVELOPED A PREFERENCE FOR ANY PARTICULAR

7   TYPE OF TECHNOLOGY FOR THE UTILITY OF THE FUTURE PROJECT,

8   BASED ON ITS PRE-DEPLOYMENT ACTIVITIES TO DATE?

9   A. We will require a balance of different types of technologies in order to obtain universal

10   coverage for the Utility of the Future project. Using smart endpoints, which can

11   communicate over an internet protocol-based network, builds on an established open

12   standards platform, and will reduce the risk of near-term obsolescence.

III.   COST-EFFECTIVENESS OF UTILITY OF THE FUTURE PROJECT

13 Q. PLEASE GENERALLY DESCRIBE THE BENEFITS OF THE UTILITY OF THE

14   FUTURE PROJECT FOR GAS CUSTOMERS.

15 A. The major benefits of the Utility of the Future project for gas customers will be reduced

16   meter reading costs; reducing the need to enter customers' homes to read meters; fewer

17   billing adjustments and re-billing; greater availability of conservation programs; and

18   enabling customers to better manage their energy usage based on timely data.

19   Installing AMI for the Utility of the Future project should allow DE-Ohio to

20   reduce its manual meter reading network coverage by approximately 95%, with the

21   remaining 5% of meter data collected by other means. In addition to reducing labor costs,

1   DE-Ohio's safety performance should improve. Meter readers operate in a challenging

2   work environment, which can lead to safety incidents. Safety incidents are measured

3   through motor vehicle incidents, OSHA injuries and lost work days. These safety

4   incidents entail additional costs, and these costs should be reduced by introducing AMI.

5   DE-Ohio has the highest number of estimated bills and re-billing of the five states

6   where Duke Energy has utility businesses because DE-Ohio has many more inside meters

7   than the other four utility businesses. AMI will result in fewer estimated meter reads,

8   which will reduce the number of billing adjustments and re-billing. AMI will also result

9   in fewer meter reading errors by meter readers, which also reduce the number of billing

10   adjustments and re-billing. The reduced number of billing adjustments and re-billing will

11   benefit customers by providing more accurate bills and will reduce DE-Ohio's labor

12   costs. AMI will also reduce the number of costly off-cycle, late meter readings arising

13   from DE-Ohio's inability to enter the customers' premises to read the meter, which will

14   also improve DE-Ohio's cash flow.

15 Q. **WHAT TYPES OF COSTS WILL DE-OHIO INCUR FOR THE UTILITY OF**

16   **THE FUTURE PROJECT?**

17 A. DE-Ohio will incur many different types of costs to implement the Utility of the Future

18   project. The following is a general list of the major categories of costs that DE-Ohio will

19   incur and is not meant to be exhaustive:

20   • **Capital startup and design costs**: this includes: (1) capital costs to acquire and

21   install the new computer servers and information technology ("IT") systems, and to

22   modify existing IT systems to support the Utility of the Future project (such as

23   meter information tracking software; meter data management software; distribution

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1   system diagnostic software; meter data presentment software to display load shape

2   data to customers via the internet; and customer information system and billing

3   system enhancements); (2) labor costs to identify and design the requirements for

4   the Utility of the Future infrastructure; (3) acquiring and installing new metering

5   equipment, equipment monitoring the distribution system, equipment for

6   controlling customer load, and equipment for data transfer, access and storage; (4)

7   testing to ensure the accuracy of customer records and network communications

8   developed using the AMI system; (5) developing new exception processes and new

9   business processes for the AMI data; (6) retirements of existing metering and meter

10   reading equipment; and (7) severance costs for displaced meter readers.

11   • **Ongoing operation and maintenance ("O&M") costs**: for incremental labor to:

12   (1) support new Utility of the Future-related applications, databases and other

13   system equipment; and (2) educate customers about the new information and

14   services.

15 Q. **WILL DE-OHIO ALSO DEPLOY THE UTILITY OF THE FUTURE PROJECT**

16   **FOR ITS ELECTRIC DISTRIBUTION SERVICE?**

17 A.   Yes. We currently plan to deploy the Utility of the Future project for both gas and

18   electric service at the same time. Much of the costs for communications systems and

19   back-office support will be common costs. This will reduce the overall costs for

20   deploying the Utility of the Future project as compared to deploying the project as a

21   stand-alone basis for either gas or electric service.

22 Q. **HAS DE-OHIO ANALYZED THE COST-EFFECTIVENESS OF THE UTILITY**

23   **OF THE FUTURE PROJECT?**

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1   A.   Yes. We have analyzed the cost-effectiveness of the Utility of the Future project on a

2   preliminary basis. This is a high level analysis and we will perform an additional cost-

3   effectiveness analysis prior to beginning full-scale deployment of the Utility of the Future

4   project.

5   Q.   **WILL DE-OHIO DO ANY MORE ANALYSIS OF THE COST-EFFECTIVENESS**

6   **OF THE UTILITY OF THE FUTURE PROJECT PRIOR TO FULL-SCALE**

7   **DEPLOYMENT?**

8   A.   Yes. DE-Ohio will continue to evaluate its requirements for full-scale deployment of the

9   Utility of the Future project during the pre-deployment stage. We will refine our

10   assumptions regarding the project costs and benefits of the Utility of the Future project

11   based on our "lessons learned" during pre-deployment. DE-Ohio commits that it will file

12   with the Commission a detailed cost/benefit analysis for the Utility of the Future project

13   prior to full-scale deployment.

**IV.   REQUEST FOR APPROVAL FOR
RIDER AU – ADVANCED UTILITY**

14 Q.   **PLEASE DESCRIBE RIDER AU.**

15 A.   Rider AU is a tracking mechanism that would allow DE-Ohio to recover the costs, and

16   pass through to customers the savings, related to the Utility of the Future project. Rider

17   AU would operate similar to Rider AMRP – Accelerated Main Replacement Program

18   ("Rider AMRP") in that DE-Ohio would make an annual filing seeking approval to

19   recover the revenue requirement related to the Utility of the Future project. DE-Ohio

20   proposes to follow the same Rider AMRP schedule for implementing Rider AU – DE-

21   Ohio will make a November 1 pre-filing using nine months of actual data and three

1   months of estimated data of Rider AU costs/benefits for the current calendar year. DE-

2   Ohio will update the filing by February 28 with an application and twelve months of

3   actual data for Rider AU costs/benefits. DE-Ohio will use its best efforts to resolve any

4   stakeholder objections by April 1, and DE-Ohio requests that, if any Commission hearing

5   is required to resolve stakeholder objections, that such hearing be held in early April,

6   such that the new Rider AU rates can be implemented with the May billing cycle.

7   In addition, DE-Ohio commits that it will file a deployment plan with the

8   Commission by August 1 annually, setting forth the Utility of the Future deployment

9   activities that DE-Ohio plans to make during the following calendar year, the expected

10   costs that DE-Ohio expects to incur, how the customer benefits will be calculated, and the

11   rate impacts. Absent any Commission ruling to the contrary by October 1 each year, DE-

12   Ohio requests that such expenditures be presumed to be prudent such that, if any

13   stakeholder seeks asserts in a subsequent Rider AU proceeding or a subsequent general

14   rate proceeding that such expenditures were imprudent, then that stakeholder shall bear

15   the burden of proof the expenditures were imprudent and should be disallowed.

16   Finally, DE-Ohio recognizes that, in modern times, technologies occasionally

17   become obsolete within a short time frame – as seen with personal computers, cellular

18   phones and music formats, to name a few examples. If, therefore, some unexpected

19   change occurs in technology, customer needs or DE-Ohio's business operations occurs,

20   such that DE-Ohio determines that all or part of the Utility of the Future project should be

21   suspended or abandoned, then DE-Ohio requests that it be permitted to recover such

22   costs, even though the costs might not meet the Commission's traditional "used and

23   useful" standard for cost recovery, as long as the costs were subject to Commission

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1   review and approval as part of DE-Ohio's annual deployment plan.

2   Q.   **WHEN WILL DE-OHIO FILE ITS INTIAL DEPLOYMENT PLAN, AND ITS**

3   **INITAIL REQUEST FOR RECOVERY OF RIDER AU RATES?**

4   A.   If the Commission approves DE-Ohio's request to implement Rider AU, DE-Ohio would

5   file its first deployment plan by August 1, 2008, and its first pre-filing for recovery of

6   Rider AU rates in November 2008.

7   Q.   **ARE THERE ANY OTHER MATTERS THAT MAY AFFECT DE-OHIO'S**

8   **PLANS FOR DEPLOYING THE UTILITY OF THE FUTURE PROJECT?**

9   A.   Yes. Three major factors will affect DE-Ohio's plans for deploying the Utility of the

10   Future project. First, the Utility of the Future project will be a large investment involving

11   new technology and involves much more uncertainty than typical utility investment.

12   Rider AU would provide DE-Ohio with reasonable assurances that it would have the

13   opportunity to recover this investment. Absent Commission approval of Rider AU or

14   some other reasonable mechanism for timely cost recovery, DE-Ohio would need to

15   evaluate whether to deploy the Utility of the Future project.

16   Second, the technology related to the Utility of the Future project is new and

17   evolving. DE-Ohio will continue to evaluate this technology, along with the business

18   case assumptions of the costs/benefits related to deploying the Utility of the Future

19   project. Unexpected changes in technology or if actual experience is significantly

20   different than the expected costs/benefits, then DE-Ohio may change or abandon all or

21   part of the Utility of the Future project.

22   Third, the Commission investigated whether to adopt smart metering standards for

23   electric service in Case No. 05-1500-EL-COI. On March 28, 2007, the Commission

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1   issued an order in that case, adopting the Staff's recommendation that the Commission

2   should hold a series of workshops to further investigate AMI, including how electric

3   distribution utilities should measure the benefits of AMI deployment; to what classes of

4   customers AMI should be provided; the manner in which AMI should be deployed; and

5   cost recovery mechanisms for AMI deployment. On May 30, 2007, the Commission

6   Staff commenced Case No. 07-646-EL-UNC to further investigate these matters, with the

7   first workshop meeting scheduled to occur on July 26, 2007. The outcome of this

8   workshop process will determine how DE-Ohio will deploy, and recover its costs, for

9   AMI for electric service, and will ultimately affect whether and how DE-Ohio decides to

10 proceed with deploying the Utility of the Future project for gas and electric service.

11 Q. **GIVEN THESE UNCERTAINTIES THAT MAY IMPACT DE-OHIO'S**

12 **DECISIONS TO DEPLOY THE UTILITY OF THE FUTURE PROJECT, WHY**

13 **DOES DE-OHIO REQUEST THAT THE COMMISSION APPROVE RIDER AU**

14 **AT THIS TIME?**

15 A. Although I am not an attorney, my understanding is that the Commission: (1) has

16 traditionally approved tracker recovery for the costs of an existing utility service in the

17 context of a general rate proceeding; and (2) would approve an Alternative Regulation

18 Plan for gas service only if a utility files the standard filing requirements that are required

19 with the filing of an application for a general increase in rates. It is reasonably certain

20 that DE-Ohio will proceed to deploy the Utility of the Future project in some form.

21 Additionally, DE-Ohio is beginning to incur some significant pre-deployment costs. In

22 my opinion, it is reasonable to initiate a tracking mechanism for the Utility of the Future

23 project costs at this time. This would allow DE-Ohio to recovery pre-deployment costs,

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1   and will provide the Commission with oversight, and will provide stakeholders with a

2   voice, in DE-Ohio's future plans for Utility of the Future project deployment and cost

3   recovery.

4   V.   **CONCLUSION**

5   Q.   **DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?**

6   A.   Yes.

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In The Matter of the Application of Duke Energy Ohio, Inc. for an Increase in Gas Rates	))))	Case No. 07-589-GA-AIR
In the Matter of the Application of Duke Energy Ohio, Inc. for Approval of an Alternative Rate Plan for its Gas Distribution Service	)))))	Case No. 07-590-GA-ALT
In the Matter of the Application of Duke Energy Ohio, Inc. for Approval to Change Accounting Methods	))))	Case No. 07-591-GA-AAM

DIRECT TESTIMONY OF

DR. ROGER A. MORIN

ON BEHALF OF

DUKE ENERGY OHIO, INC.

_____ Management policies, practices, and organization

_____ Operating income

_____ Rate Base

_____ Allocations

____x____ Rate of return

_____ Rates and tariffs

_____ Other

211256

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In The Matter of the Application of	)	
Duke Energy Ohio, Inc. for an	)	Case No. 07-589-GA-AIR
Increase in Gas Rates	)	
	)	
In the Matter of the Application of	)	
Duke Energy Ohio, Inc. for Approval	)	Case No. 07-590-GA-ALT
of an Alternative Rate Plan for its	)	
Gas Distribution Service	)	
	)	
In the Matter of the Application of	)	
Duke Energy Ohio, Inc. for Approval	)	Case No. 07-591-GA-AAM
to Change Accounting Methods	)	

DIRECT TESTIMONY OF

DR. ROGER A. MORIN

ON BEHALF OF

DUKE ENERGY OHIO, INC.

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Testimony supporting return on equity.

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I.   INTRODUCTION AND PURPOSE

1   Q.   **PLEASE STATE YOUR NAME, ADDRESS, AND OCCUPATION.**

2   A.   My name is Dr. Roger A. Morin.   My business address is Georgia State University,

3   Robinson College of Business, University Plaza, Atlanta, Georgia 30303. I am Emeritus

4   Professor of Finance at the College of Business, Georgia State University and Professor

5   of Finance for Regulated Industry at the Center for the Study of Regulated Industry at

6   Georgia State University. I am also a principal in Utility Research International, an

7   enterprise engaged in regulatory finance and economics consulting to business and

8   government.

9   Q.   **PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.**

10 A.   I hold a Bachelor of Engineering degree and an MBA in Finance from McGill University,

11   Montreal, Canada. I received my Ph.D. in Finance and Econometrics at the Wharton

12   School of Finance, University of Pennsylvania.

13 Q.   **PLEASE SUMMARIZE YOUR ACADEMIC AND BUSINESS CAREER.**

14 A.   I have taught at the Wharton School of Finance, University of Pennsylvania, Amos Tuck

15   School of Business at Dartmouth College, Drexel University, University of Montreal,

16   McGill University, and Georgia State University. I was a faculty member of Advanced

17   Management Research International, and I am currently a faculty member of The

18   Management Exchange Inc. and Exnet, Inc., where I continue to conduct frequent

19   national executive-level education seminars throughout the United States and Canada. In

20   the last twenty-five years, I have conducted numerous national seminars on "Utility

21   Finance," "Utility Cost of Capital," "Alternative Regulatory Frameworks," and on "Utility

22   Capital Allocation," which I have developed on behalf of The Management Exchange Inc.

1   and Exnet in conjunction with Public Utilities Reports, Inc.

2   I have authored or co-authored several books, monographs, and articles in

3   academic scientific journals on the subject of finance. They have appeared in a variety of

4   journals, including The Journal of Finance, The Journal of Business Administration,

5   International Management Review, and Public Utility Fortnightly. I published a widely-

6   used treatise on regulatory finance, Utilities' Cost of Capital, Public Utilities Reports,

7   Inc., Arlington, Va. 1984. In late 1994, the same publisher released Regulatory Finance,

8   a voluminous treatise on the application of finance to regulated utilities. A revised and

9   expanded edition of this book entitled The New Regulatory Finance was recently

10   published in August 2006. I have engaged in extensive consulting activities on behalf of

11   numerous corporations, legal firms, and regulatory bodies in matters of financial

12   management and corporate litigation. Attachment RAM-1 describes my professional

13   credentials in more detail.

14 Q. **HAVE YOU PREVIOUSLY TESTIFIED ON COST OF CAPITAL BEFORE**

15   **UTILITY REGULATORY COMMISSIONS?**

16 A. Yes, I have been a cost of capital witness before nearly fifty (50) regulatory bodies in

17   North America, including the Public Utilities Commission of Ohio ("PUCO" or

18   "Commission"), the Federal Energy Regulatory Commission, and the Federal

19   Communications Commission. I have also testified before the following state, provincial,

20   and other local regulatory commissions:

Alabama	Hawaii	Montana	Ontario
Alaska	Illinois	Nevada	Oregon
Alberta	Indiana	New Brunswick	Pennsylvania
Arizona	Iowa	New Hampshire	Quebec
Arkansas	Kentucky	New Jersey	South Carolina
British Columbia	Louisiana	New York	South Dakota
California	Maine	Newfoundland	Tennessee
Colorado	Manitoba	North Carolina	Texas
Delaware	Michigan	North Dakota	Utah
District of Columbia	Minnesota	Nova Scotia	Vermont
Florida	Mississippi	Ohio	Washington
Georgia	Missouri	Oklahoma	West Virginia

The details of my participation in regulatory proceedings are provided in Attachment RAM-1.

1   Q.   **WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

2   A.   The purpose of my testimony in this proceeding is to present an independent appraisal of

3   the fair and reasonable rate of return on the natural gas utility operations of Duke Energy

4   Ohio Inc. (formerly known as "The Cincinnati Gas & Electric Company") in the State of

5   Ohio with particular emphasis on the fair return on Duke Energy Ohio Inc.'s ("DE-Ohio,"

6   or "Company") common equity capital committed to that business. Based upon this

7   appraisal, I have formed my professional judgment as to a return on such capital that

8   would: (1) be fair to the ratepayer, (2) allow the Company to attract capital on reasonable

9   terms, (3) maintain the Company's financial integrity, and (4) be comparable to returns

10   offered on comparable risk investments. I will testify in this proceeding as to that

11   opinion.

12   This testimony and accompanying schedules were prepared by me or under my

13   direct supervision and control. The source documents for my testimony are Company

14   records, public documents, commercial data sources, and my personal knowledge and

15   experience.

16   Q.   **PLEASE BRIEFLY IDENTIFY THE SCHEDULES AND APPENDICES**

1 ACCOMPANYING YOUR TESTIMONY.

2 A. I have attached to my testimony Attachment RAM-1 through Attachment RAM-9 and

3 Appendices A and B. These Attachments and Appendices relate directly to points in my

4 testimony, and are described in further detail in connection with the discussion of those

5 points in my testimony.

6 Q. **PLEASE SUMMARIZE YOUR FINDINGS AND RECOMMENDATION.**

7 A. I have examined DE-Ohio's risks, and concluded that DE-Ohio's risk environment is

8 comparable to the industry average. It is my opinion that a just and reasonable rate of

9 return on common equity ("ROE") on DE-Ohio's natural gas delivery operations is

10 11.0%. My recommendation is derived from studies that I performed using the Capital

11 Asset Pricing Model ("CAPM"), Risk Premium, and Discounted Cash Flow ("DCF")

12 methodologies. I performed two CAPM analyses, one using the plain vanilla CAPM and

13 another using an empirical approximation of the CAPM ("ECAPM"). I performed three

14 risk premium analyses: (1) a historical risk premium analysis on the natural gas utility

15 industry, (2) a historical risk premium analysis on the electric utility industry as a proxy

16 for the Company's natural gas delivery business, and (3) a study of the risk premiums

17 allowed in the natural gas utility industry. I also performed DCF analyses on two

18 surrogates for the Company's natural gas delivery business. They are: a group of

19 investment-grade natural gas distribution utilities and a group of investment-grade

20 electricity distribution utilities.

21 My recommended rate of return reflects the application of my professional

22 judgment to the results in light of the indicated returns from my Risk Premium, CAPM,

23 and DCF analyses. Moreover, my recommended return is predicated on the assumption

1   that the Commission will approve the continuation of the Company's Accelerated Main

2   Replacement Program ("AMRP") and the Company's sales decoupling proposal. Absent

3   this risk-mitigating mechanism, my recommended return would be significantly higher.

4   My recommended ROE also assumes the approval of the Company's test year capital

5   structure.

6   **Q.**   **PLEASE EXPLAIN HOW LOW AUTHORIZED RETURNS ON EQUITY CAN**

7   **INCREASE BOTH THE FUTURE COST OF EQUITY AND DEBT FINANCING.**

8   **A.**   If a utility is authorized a ROE below the level required by equity investors, the utility (or

9   its parent) will find it difficult to access the equity market through common stock

10   issuance at its current market price. Investors will not provide equity capital at the

11   current market price if the earnable ROE is below the level they require given the risks of

12   an equity investment in the utility. The equity market corrects this by generating a stock

13   price in equilibrium that reflects the valuation of the potential earnings stream from an

14   equity investment at the risk-adjusted return equity investors require. In the case of a

15   utility that has been authorized a return below the level investors believe is appropriate

16   for the risk they bear, the result is a decrease in the utility's market price per share of

17   common stock. This reduces the financial viability of equity financing in two ways.

18   First, because the utility's share price per common stock decreases, the net proceeds from

19   issuing common stock are reduced. Second, since the utility's market to book ("M/B")

20   ratio decreases with the decrease in the share price of common stock, the potential risks

21   from dilution of equity investments reduces investors' inclination to purchase new issues

22   of common stock. The ultimate effect is the utility will have to rely more on debt

23   financing to meet its capital needs.

1   As the company relies more on debt financing, its capital structure becomes more

2 leveraged. Because debt payments are a fixed financial obligation to the utility, and

3 income available to common equity is subordinate to fixed charges, this decreases the

4 operating income available for dividend and earnings growth. Consequently, equity

5 investors face greater uncertainty about future dividends and earnings from the firm. As a

6 result, the firm's equity becomes a riskier investment. The risk of default on the

7 company's bonds also increases, making the utility's debt a riskier investment. This

8 increases the cost to the utility from both debt and equity financing and increases the

9 possibility the company will not have access to the capital markets for its outside

10 financing needs. Ultimately, to ensure that DE-Ohio has access to capital markets for its

11 capital needs, a fair and reasonable authorized ROE of 11.0% is required.

12 Q. **DR. MORIN, PLEASE DESCRIBE HOW YOUR TESTIMONY IS ORGANIZED.**

13 A. The remainder of my testimony is divided into three (3) sections:

14   I. Regulatory Framework and Rate of Return;

15   II. Cost of Equity Estimates; and

16   III. Summary and Cost of Equity Recommendation.

17   The first section discusses the rudiments of rate of return regulation and the basic

18 notions underlying rate of return. The second section contains the application of CAPM,

19 Risk Premium, and DCF tests. The third section summarizes the results from the various

20 approaches used in determining a fair return.

         II.   **REGULATORY FRAMEWORK AND RATE OF RETURN**

21 Q. **WHAT ECONOMIC AND FINANCIAL CONCEPTS HAVE GUIDED YOUR**

22   **ASSESSMENT OF DE-OHIO'S COST OF COMMON EQUITY?**

1   A.   Two fundamental economic principles underlie the appraisal of the Company's cost of

2   equity, one relating to the supply side of capital markets, the other to the demand side.

3   According to the first principle, a rational investor is maximizing the performance of his

4   portfolio only if he expects the returns earned on investments of comparable risk to be the

5   same. If not, the rational investor will switch out of those investments yielding lower

6   returns at a given risk level in favor of those investment activities offering higher returns

7   for the same degree of risk. This principle implies that a company will be unable to

8   attract the capital funds it needs to meet its service demands and to maintain financial

9   integrity unless it can offer returns to capital suppliers that are comparable to those

10   achieved on competing investments of similar risk. On the demand side, the second

11   principle asserts that a company will continue to invest in real physical assets if the return

12   on these investments exceeds or equals the company's cost of capital. This concept

13   suggests that a regulatory commission should set rates at a level sufficient to create

14   equality between the return on physical asset investments and the company's cost of

15   capital.

16   Q.   **HOW DOES DE-OHIO'S COST OF CAPITAL RELATE TO THAT OF ITS**

17   **PARENT COMPANY, DUKE ENERGY CORPORATION ("DUKE ENERGY")?**

18   A.   I am treating DE-Ohio's natural gas delivery operations as a separate stand-alone entity,

19   distinct from its holding company, Duke Energy, because it is the cost of capital for DE-

20   Ohio's natural gas utility business that we are attempting to measure and not the cost of

21   capital for Duke Energy's consolidated activities. Financial theory establishes that the

22   true cost of capital depends on the use to which the capital is put, in this case DE-Ohio's

23   natural gas delivery operations in the State of Ohio. The specific source of funding an

1   investment and the cost of funds to the investor are irrelevant considerations.

2   For example, if an individual investor borrows money at the bank at an after-tax

3   cost of 8% and invests the funds in a speculative oil extraction venture, the required

4   return on the investment is not the 8% cost but, rather, the return foregone in speculative

5   projects of similar risk, say 20%. Similarly, the required return on DE-Ohio is the return

6   foregone in comparable risk energy delivery operations, and is unrelated to the parent's

7   cost of capital. The cost of capital is governed by the risk to which the capital is exposed

8   and not by the source of funds. The identity of the shareholders has no bearing on the

9   cost of equity, be it either individual investors or a parent holding company.

10   Just as individual investors require different returns from different assets in

11   managing their personal affairs, corporations behave in the same manner. A parent

12   company normally invests money in many operating companies of varying sizes and

13   varying risks. These operating subsidiaries pay different rates for the use of investor

14   capital, such as for long-term debt capital, because investors recognize the differences in

15   capital structure, risk, and prospects between subsidiaries. Thus, the cost of investing

16   funds in an operating utility entity such as DE-Ohio is the return foregone on investments

17   of similar risk and is unrelated to the investor's identity.

18 Q.   **UNDER TRADITIONAL COST OF SERVICE REGULATION, PLEASE**

19   **EXPLAIN HOW A REGULATED COMPANY'S RATES SHOULD BE SET.**

20 A.   Under the traditional regulatory process, a regulated company's rates should be set so that

21   the company recovers its costs, including taxes and depreciation, plus a fair and

22   reasonable return on its invested capital. The allowed rate of return must necessarily

23   reflect the cost of the funds obtained, that is, investors' return requirements. In

1   determining a company's rate of return, the starting point is investors' return requirements

2   in financial markets. A rate of return can then be set at a level sufficient to enable the

3   company to earn a return commensurate with the cost of those funds.

4   Funds can be obtained in two general forms, debt capital and equity capital. The

5   cost of debt funds can be easily ascertained from an examination of the contractual

6   interest payments. The cost of common equity funds, that is, investors' required rate of

7   return, is more difficult to estimate. It is the purpose of the next section of my testimony

8   to estimate DE-Ohio's cost of common equity capital.

9 Q. DR. MORIN, WHAT MUST BE CONSIDERED IN ESTIMATING A FAIR ROE?

10 A. The legal requirement is that the allowable ROE should be commensurate with returns on

11   investments in other firms having corresponding risks. The allowed return should be

12   sufficient to assure confidence in the financial integrity of the firm, in order to maintain

13   creditworthiness, and ability to attract capital on reasonable terms. The attraction of

14   capital standard focuses on investors' return requirements that are generally determined

15   using market value methods, such as the Risk Premium, CAPM, or DCF methods. These

16   market value tests define fair return as the return that investors anticipate when they

17   purchase equity shares of comparable risk in the financial marketplace. This return is a

18   market rate of return, defined in terms of anticipated dividends and capital gains as

19   determined by expected changes in stock prices, and reflects the opportunity cost of

20   capital. The economic basis for market value tests is that new capital will be attracted to

21   a firm only if the return expected by the suppliers of funds is commensurate with that

22   available from alternative investments of comparable risk.

23 Q. WHAT FUNDAMENTAL PRINCIPLES UNDERLIE THE DETERMINATION

1   OF A FAIR AND REASONABLE ROE?

2 A.   The heart of utility regulation is the setting of just and reasonable rates by way of a fair

3   and reasonable return. There are two landmark United States Supreme Court cases that

4   define the legal principles underlying the regulation of a public utility's rate of return and

5   provide the foundations for the notion of a fair return:

6   1. Bluefield Water Works & Improvement Co. v. Public Service Commission of West

7   Virginia, 262 U.S. 679 (1923).

8   2. Federal Power Commission v. Hope Natural Gas Company, 320 U.S. 591 (1944).

9   The Bluefield case set the standard against which just and reasonable rates

10 of return are measured:

11   *"A public utility is entitled to such rates as will permit it to earn a return on*

12   *the value of the property which it employs for the convenience of the public equal*

13   *to that generally being made at the same time and in the same general part of the*

14   *country on investments in other business undertakings which are attended by*

15   *corresponding risks and uncertainties ... The return should be reasonable,*

16   *sufficient to assure confidence in the financial soundness of the utility, and should*

17   *be adequate, under efficient and economical management, to maintain and*

18   *support its credit and enable it to raise money necessary for the proper discharge*

19   *of its public duties."*   *(Emphasis added)*

20   The Hope case expanded on the guidelines to be used to assess the

21 reasonableness of the allowed return. The Court reemphasized its statements in the

22 Bluefield case and recognized that revenues must cover "capital costs." The Court stated:

1   *"From the investor or company point of view it is important that there be*

2   *enough revenue not only for operating expenses but also for the capital costs of*

3   *the business. These include service on the debt and dividends on the stock ... By*

4   *that standard the* <u>*return to the equity owner should be commensurate with returns*</u>

5   <u>*on investments in other enterprises having corresponding risks.*</u> *That return,*

6   *moreover, should be sufficient to* <u>*assure confidence in the financial integrity*</u> *of*

7   *the enterprise, so as to maintain its credit and attract capital." (Emphasis added)*

8   The United States Supreme Court reiterated the criteria set forth in <u>Hope</u> in

9   <u>Federal Power Commission v. Memphis Light, Gas & Water Division</u>, 411 U.S. 458

10   (1973), in <u>Permian Basin Rate Cases</u>, 390 U.S. 747 (1968), and most recently in

11   <u>Duquesne Light Co. vs. Barasch</u>, 488 U.S. 299 (1989). In the <u>Permian</u> cases, the

12   Supreme Court stressed that a regulatory agency's rate of return order should:

13   *"...reasonably be expected to maintain financial integrity, attract necessary capital,*

14   *and fairly compensate investors for the risks they have assumed..."*

15   Therefore, the "end result" of the Commission's decision should be to allow DE-

16   Ohio the opportunity to earn a return on equity that is: (1) commensurate with returns on

17   investments in other firms having corresponding risks, (2) sufficient to assure confidence

18   in the Company's financial integrity, and (3) sufficient to maintain the Company's

19   creditworthiness and ability to attract capital on reasonable terms.

20   **Q.**   **HOW IS THE FAIR RATE OF RETURN DETERMINED?**

21   **A.**   The aggregate return required by investors is called the "cost of capital." The cost of

22   capital is the opportunity cost, expressed in percentage terms, of the total pool of capital

23   employed by the utility. It is the composite weighted cost of the various classes of capital

24   (*i.e.*, bonds, preferred stock, common stock) used by the utility, with the weights

25   reflecting the proportions of the total capital that each class of capital represents. The

1 fair return in dollars is obtained by multiplying the rate of return set by the regulator by

2 the utility's "rate base." The rate base is essentially the net book value of the utility's

3 plant and other assets used to provide utility service in a particular jurisdiction.

4 While utilities like DE-Ohio enjoy varying degrees of monopoly in the sale of

5 public utility services, they must compete with everyone else in the free, open market for

6 the input factors of production, whether they be labor, materials, machines, or capital.

7 The prices of these inputs are set in the competitive marketplace by supply and demand,

8 and it is these input prices that are incorporated in the cost of service computation. This

9 item is just as true for capital as for any other factor of production. Since utilities and

10 other investor-owned businesses must go to the open capital market and sell their

11 securities in competition with every other issuer, there is obviously a market price to pay

12 for the capital they require, for example, the interest on debt capital, or the expected

13 market return on common and/or preferred equity.

14 Q. HOW DOES THE CONCEPT OF A FAIR RETURN RELATE TO THE CONCEPT

15   OF OPPORTUNITY COST?

16 A. The concept of a fair return is intimately related to the economic concept of "opportunity

17   cost." When investors supply funds to a utility by buying its stocks or bonds, they are not

18   only postponing consumption, giving up the alternative of spending their dollars in some

19   other way, they also are exposing their funds to risk and forgoing returns from investing

20   their money in alternative comparable-risk investments. The compensation that they

21   require is the price of capital. If there are differences in the risk of the investments,

22   competition among firms for a limited supply of capital will bring different prices. These

23   differences in risk are translated by the capital markets into price differences in much the

1   same way that differences in the characteristics of commodities are reflected in different

2   prices.

3   The important point is that the prices of debt capital and equity capital are set by

4   supply and demand, and both are influenced by the relationship between the risk and

5   return expected for the respective securities and the risks expected from the overall menu

6   of available securities.

7 Q.   **HOW DOES THE COMPANY OBTAIN ITS CAPITAL AND HOW IS ITS**

8   **OVERALL COST OF CAPITAL DETERMINED?**

9 A.   The funds employed by the Company are obtained in two general forms, debt capital and

10   equity capital. The latter consists of common equity capital. The cost of debt funds and

11   preferred stock funds can be ascertained easily from an examination of the contractual

12   terms for the interest payments and preferred dividends. The cost of common equity

13   funds, that is, equity investors' required rate of return, is more difficult to estimate

14   because the dividend payments received from common stock are not contractual or

15   guaranteed in nature. They are uneven and risky, unlike interest payments. Once a cost of

16   common equity estimate has been developed, it can then easily be combined with the

17   embedded cost of debt and preferred stock, based on the utility's capital structure, in

18   order to arrive at the overall cost of capital.

19 Q.   **WHAT IS THE MARKET REQUIRED RATE OF RETURN ON EQUITY**

20   **CAPITAL?**

21 A.   The market required rate of return on common equity, or cost of equity, is the return

22   demanded by the equity investor. Investors establish the price for equity capital through

23   their buying and selling decisions. Investors set return requirements according to their

1 perception of the risks inherent in the investment, recognizing the opportunity cost of

2 forgone investments, and the returns available from other investments of comparable risk.

III. COST OF EQUITY ESTIMATES

3 **Q. DR. MORIN, HOW DID YOU ESTIMATE THE FAIR ROE FOR DE-OHIO?**

4 A. I employed three methodologies: (1) the CAPM, (2) the Risk Premium, and (3) the DCF.

5 All three items are market-based methodologies and are designed to estimate the return

6 required by investors on the common equity capital committed to DE-Ohio.

7 **Q. WHY DID YOU USE MORE THAN ONE APPROACH FOR ESTIMATING THE**

8 **COST OF EQUITY?**

9 A. No one individual method provides the necessary level of precision for determining a fair

10 return, but each method provides useful evidence to facilitate the exercise of an informed

11 judgment. Reliance on any single method or preset formula is inappropriate when dealing

12 with investor expectations because of possible measurement difficulties and vagaries in

13 individual companies' market data. Examples of such vagaries include dividend

14 suspension, insufficient or unrepresentative historical data due to a recent merger,

15 impending merger or acquisition, and a new corporate identity due to restructuring

16 activities. The advantage of using several different approaches is that the results of each

17 one can be used to check the others.

18 As a general proposition, it is extremely dangerous to rely on only one generic

19 methodology to estimate equity costs. The difficulty is compounded when only one

20 variant of that methodology is employed. It is compounded even further when that one

21 methodology is applied to a single company. Hence, several methodologies applied to

22 several comparable risk companies should be employed to estimate the cost of common

1 equity.

2 Q. DR. MORIN, ARE YOU AWARE THAT SOME REGULATORY COMMISSIONS

3   AND SOME ANALYSTS HAVE PLACED PRINCIPAL RELIANCE ON DCF-

4   BASED ANALYSES TO DETERMINE THE COST OF EQUITY FOR PUBLIC

5   UTILITIES?

6 A. Yes, I am.

7 Q. DO YOU AGREE WITH THIS APPROACH?

8 A. While I agree that it is certainly appropriate to use the DCF methodology to estimate the

9   cost of equity, and I myself do rely on such evidence, there is no proof that the DCF

10   produces a more accurate estimate of the cost of equity than other methodologies. As I

11   have stated, there are three broad generic methodologies available to measure the cost of

12   equity: DCF, Risk Premium, and CAPM. All three of these methodologies are accepted

13   and used by the financial community and firmly supported in the financial literature.

14   When measuring the cost of common equity, which essentially deals with the

15   measurement of investor expectations, no one single methodology provides a foolproof

16   panacea. Each methodology requires the exercise of considerable judgment on the

17   reasonableness of the assumptions underlying the methodology and on the reasonableness

18   of the proxies used to validate the theory and apply the methodology. The failure of the

19   traditional infinite growth DCF model to account for changes in relative market

20   valuation, and the practical difficulties of specifying the expected growth component, are

21   vivid examples of the potential shortcomings of the DCF model. It follows that more

22   than one methodology should be employed in arriving at a judgment on the cost of equity

23   and that all of these methodologies should be applied to multiple groups of comparable

1   risk companies.

2   There is no single model that conclusively determines or estimates the expected

3   return for an individual firm. Each methodology has its own way of examining investor

4   behavior, its own premises, and its own set of simplifications of reality. Investors do not

5   necessarily subscribe to any one method, nor does the stock price reflect the application

6   of any one single method by the price-setting investor. Absent any hard evidence as to

7   which method outperforms the other, all relevant evidence should be used, without

8   discounting the value of any results, in order to minimize judgmental error, measurement

9   error, and conceptual infirmities. I submit that a regulatory body should rely on the

10 results of a variety of methods applied to a variety of comparable groups. There is no

11 guarantee that a single DCF result is necessarily the ideal predictor of the stock price and

12 of the cost of equity reflected in that price, just as there is no guarantee that a single

13 CAPM or Risk Premium result constitutes the perfect explanation of a stock's price or the

14 cost of equity.

15 Q.   **DOES THE FINANCIAL LITERATURE SUPPORT THE USE OF MORE THAN**

16   **A SINGLE METHOD?**

17 A.   Yes. Authoritative financial literature strongly supports the use of multiple methods. For

18   example, Professor Eugene F. Brigham, a widely respected scholar and finance

19   academician, discusses the various methods used in estimating the cost of common equity

20   capital, and states (see E. F. Brigham and M. C. Ehrhardt, <u>Financial Management Theory</u>

21   <u>and Practice</u>, p. 311 (11th ed., Thomson South-Western, 2005):

22   *Three methods typically are used: (1) the Capital Asset Pricing Model (CAPM),*
23   *(2) the discounted cash flow (DCF) model, and (3) the bond-yield-plus-risk-*
24   *premium approach. These methods are not mutually exclusive - no method*

1 *dominates the others, and all are subject to error when used in practice.*

2 *Therefore, when faced with the task of estimating a company' cost of equity, we*

3 *generally use all three methods....*

4 Another prominent finance scholar, Professor Stewart Myers, points out (see S. C. Myers,

5 "On the Use of Modern Portfolio Theory in Public Utility Rate Cases: Comment,"

6 Financial Management, p. 67, Autumn 1978):

7 *Use more than one model when you can. Because estimating the opportunity cost*
8 *of capital is difficult, only a fool throws away useful information. That means you*
9 *should not use any one model or measure mechanically and exclusively. Beta is*
10 *helpful as one tool in a kit, to be used in parallel with DCF models or other*
11 *techniques for interpreting capital market data.*

12 Q. **DOES THE BROAD USE OF THE DCF METHODOLOGY IN PAST**

13 **REGULATORY PROCEEDINGS INDICATE THAT IT IS SUPERIOR TO**

14 **OTHER METHODS?**

15 A. No, it does not. Uncritical acceptance of the standard DCF equation vests the model with

16 a degree of reliability that is simply not justified. One of the leading experts on

17 regulation, Dr. Charles F. Phillips discusses the dangers of relying solely on the DCF

18 model (see C. F. Phillips, The Regulation of Public Utilities Theory and Practice, Public

19 Utilities Reports, Inc., 1988, pp. 376-77 [Footnotes omitted]:

20 *"[U]se of the DCF model for regulatory purposes involves both theoretical and*

21 *practical difficulties. The theoretical issues include the assumption of a constant*

22 *retention ratio (i.e. a fixed payout ratio) and the assumption that dividends will*

23 *continue to grow at a rate 'g' in perpetuity. Neither of these assumptions has any*

24 *validity, particularly in recent years. Further, the investors' capitalization rate*

25 *and the cost of equity capital to a utility for application to book value (i.e. an*

26 *original cost rate base) are identical only when market price is equal to book*

1   *value. Indeed, DCF advocates assume that if the market price of a utility's*

2   *common stock exceeds its book value, the allowable rate of return on common*

3   *equity is too high and should be lowered; and vice versa. Many question the*

4   *assumption that market price should equal book value, believing that the earnings*

5   *of utilities should be sufficiently high to achieve market-to-book ratios which are*

6   *consistent with those prevailing for stocks of unregulated companies."*

7   *...[T]here remains the circularity problem: Since regulation establishes a level of*

8   *authorized earnings which, in turn, implicitly influences dividends per share,*

9   *estimation of the growth rate from such data is an inherently circular process.*

10   *For all of these reasons, the DCF model suggests a degree of precision which is*

11   *in fact not present and leaves wide room for controversy about the level of k [cost*

12   *of equity].*

13

14   Sole reliance on any one model, whether it is DCF, CAPM, or Risk Premium,

15   simply ignores the capital market evidence and investors' use of the other theoretical

16   frameworks. The DCF model is only one of many tools to be employed in conjunction

17   with other methods to estimate the cost of equity. It is not a superior methodology that

18   should supplant other financial theory and market evidence. The same is true of the

19   CAPM.

20   Q.   **DOES THE DCF MODEL UNDERSTATE THE COST OF EQUITY?**

21   A.   Yes, it does under current capital market conditions. Application of the DCF model

22   produces estimates of common equity cost that are consistent with investors' expected

23   return only when stock price and book value are reasonably similar, that is, when the M/B

24   ratio is close to unity. As shown below, application of the standard DCF model to utility

25   stocks understates the investor's expected return when the M/B ratio of a given stock

26   exceeds unity. This item is particularly relevant in the current capital market environment

1   where utility stocks are trading at M/B ratios well above unity and have been for two

2   decades. The converse is also true, that is, the DCF model overstates the investor's return

3   when the stock's M/B ratio is less than unity. The reason for the distortion is that the

4   DCF market return is applied to a book value rate base by the regulator, that is, a utility's

5   earnings are limited to earnings on a book value rate base.

6   Q.   **CAN YOU ILLUSTRATE THE EFFECT OF THE M/B RATIO ON THE DCF**

7   **MODEL BY MEANS OF A SIMPLE EXAMPLE?**

8   A.   Yes. The simple numerical illustration shown in the table below demonstrates the result

9   of applying a market value cost rate to book value rate base under three different M/B

10   scenarios. The three columns correspond to three M/B situations: the stock trades below,

11   equal to, and above book value, respectively. The last situation (third column of

12   numbers) is noteworthy and representative of the current capital market environment.

13   The DCF cost rate of 10%, made up of a 5% dividend yield and a 5% growth rate, is

14   applied to the book value rate base of $50 to produce $5.00 of earnings. Of the $5.00 of

15   earnings, the full $5.00 are required for dividends to produce a dividend yield of 5% on a

16   stock price of $100.00, and no dollars are available for growth. The investor's return is

17   therefore only 5% versus his required return of 10%. A DCF cost rate of 10%, which

18   implies $10.00 of earnings, translates to only $5.00 of earnings on book value, a 5%

19   return.

20   The situation is reversed in the first column when the stock trades below book

21   value. The $5.00 of earnings is more than enough to satisfy the investor's dividend

22   requirements of $1.25, leaving $3.75 for growth, for a total return of 20%. This item

23   occurs when the DCF cost rate is applied to a book value rate base well above the market

1 price.

2 Therefore, the DCF cost rate significantly understates the investor's required

3 return when stock prices are well above book, as is the case presently.

EFFECT OF MARKET-TO-BOOK RATIO ON MARKET RETURN

	Situation	1	2	3
1	Initial purchase price	$25.00	$50.00	$100.00
2	Initial book value	$50.00	$50.00	$50.00
3	Initial M/B	0.50	1.00	2.00
4	DCF Return 10% = 5% + 5%	10%	10%	10%
5	Dollar Return	$5.00	$5.00	$5.00
6	Dollar Dividends 5% Yield	$1.25	$2.50	$5.00
7	Dollar Growth 5% Growth	$3.75	$2.50	$0.00
8	Market Return	20%	10%	5%

4 Q. DOES THE ANNUAL VERSION OF THE DCF MODEL UNDERSTATE THE

5 COST OF EQUITY?

6 A. Yes, it does. Another reason why the DCF methodology understates the cost of equity is

7 that the annual DCF model usually employed in regulatory settings assumes that dividend

8 payments are made annually at the end of the year, while most utilities in fact pay

9 dividends on a quarterly basis. Failure to recognize the quarterly nature of dividend

10 payments understates the cost of equity capital by about 30 basis points. By analogy, a

11 bank rate on deposits which does not take into consideration the timing of the interest

12 payments understates the true yield of your investment if you receive the interest

13 payments more than once a year. Since the stock price employed in the DCF model

14 already reflects the quarterly stream of dividends to be received, consistency therefore

15 requires explicit recognition of the quarterly nature of dividend payments. One only has

16 to think of what would happen to a company's stock price if the company was to suddenly

17 announce that it is, from now on, paying dividends once a year at the end of the year

1   instead of four times a year each quarter. Clearly, the stock price would decline by an

2   amount reflecting the lost time value of money.

3 **Q. DO REGULATORS RELY PRIMARILY ON THE DCF MODEL?**

4 A.   A majority of regulatory commissions, including the PUCO, do not, as a matter of

5   practice, rely solely on the DCF model results in setting the allowed rate of return on

6   common equity. According to the survey results posted in the <u>Utility Regulatory Policy</u>

7   <u>in the United States and Canada – 1994-1995 Compilation</u> which was conducted by the

8   National Association of Regulatory Utility Commissioners ("NARUC"), regulators utilize

9   a variety of methods and rely on all the evidence submitted.

10 **Q. DO REGULATORS SHARE YOUR RESERVATIONS ON THE RELIABILITY**

11   **OF THE DCF MODEL?**

12 A.   Yes, I believe they do. While a majority of regulatory commissions do not, as a matter of

13   practice, rely solely on the DCF model results in setting the allowed ROE, some

14   regulatory commissions have explicitly recognized the need to avoid exclusive reliance

15   upon the DCF model and have acknowledged the need to adjust upward the DCF result

16   when M/B ratios exceed one.[1] In a recent case involving Pacific Bell Telephone

17   Company, the California Commission (Application No. 01-02-024, Joint Application of

18   ATT Communications, Opinion Establishing Revised Unbundled Network Element Rates

19   at VI.N, October 2004) declined to place any reliance on the DCF method, finding that it

20   was "too dependent on one forecasted input."

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[4] See the Indiana Utility Regulatory Commission decision in Indiana Mich. Power Co. (IURC 8/24/90), Cause No. 38728, 116 PUR4th 1, 17-18. See also the Iowa Utilities Board decision in U.S. West Communications, Inc. Docket No. RPR-93-9, 152 PUR4th 446, 459 (Iowa 1994). See also the Hawaii Public Utilities Commission decision in Hawaiian Electric Company, Inc., 134 PUR4th 418, 479 (1992).

1   My sentiments on the DCF model were echoed in a decision by the Indiana Utility

2   Regulatory Commission ("IURC"). The IURC recognized its concerns with the DCF

3   model and that the model understates the cost of equity. In Cause No. 39871 Final Order,

4   the IURC states on page 24:

5   *"....the DCF model, heavily relied upon by the Public, understates the cost of*

6   *common equity. The Commission has recognized this fact before. In Indiana*

7   *Mich. Power Co. (IURC 8/24/90), Cause No. 38728, 116 PUR4th 1, 17-18, we*

8   *found:*

9   *The unadjusted DCF result is almost always well below what any informed*

10   *financial analyst would regard as defensible, and therefore requires an upward*

11   *adjustment based largely on the expert witness's judgment."*

12   The Commission also expressed its concern with a witness relying solely on one

13   methodology:

14   *"......the Commission has had concerns in our past orders with a witness relying*

15   *solely on one methodology in reaching an opinion on a proper return on equity*

16   *figure." (page 25)*

17

18   Clear evidence that regulators have in fact not relied on the DCF model

19   exclusively is the fact that M/B ratios have exceeded unity for over two decades. Had

20   regulators relied exclusively on the DCF model, utility stocks would have traded at or

21   near book value. Regulators have "corrected" for this M/B problem by considering

22   alternative methods for estimating capital cost.

23   Q.   IS THE USAGE OF THE DCF MODEL PREVALENT IN CORPORATE

24   PRACTICES?

25   A.   No, not really. The CAPM continues to be widely used by analysts, investors, and

26   corporations. Bruner, Eades, Harris, and Higgins (1998) in a comprehensive survey of

1   current practices for estimating the cost of capital (see Bruner, R. F., Eades, K. M., Harris,

2   R. S., and Higgins, R. C., "Best Practices in Estimating the Cost of Capital: Survey and

3   Synthesis," *Financial Practice and Education*, Vol. 8, Number 1, Spring/Summer 1998,

4   page 18) found that 81% of companies used the CAPM to estimate the cost of equity, 4%

5   used a modified CAPM, and 15% were uncertain. In another comprehensive survey

6   conducted by Graham and Harvey (2001), the managers surveyed reported using more than

7   one methodology to estimate the cost of equity, and 73% used the CAPM (see Graham, J.

8   R. and Harvey, C. R., "The Theory and Practice of Corporate Finance: Evidence from the

9   Field," *Journal of Financial Economics*, Vol. 61, 2001, pp. 187-243).

10   Since its introduction by Professor William F. Sharpe in 1964, the CAPM has

11   gained immense popularity as the practitioner's method of choice when estimating cost of

12   capital under conditions of risk. The intuitive simplicity of its basic concept (that

13   investors must get compensated for the risk they assume), and the relatively easy

14   application of the CAPM are the main reasons behind its popularity.

15 Q. **DO THE ASSUMPTIONS UNDERLYING THE DCF MODEL REQUIRE THAT**

16   **THE MODEL BE TREATED WITH CAUTION?**

17 A. Yes, particularly in today's rapidly changing utility industry. Even ignoring the

18   fundamental thesis that several methods and/or variants of such methods should be used

19   in measuring equity costs, the DCF methodology, as those familiar with the industry and

20   the accepted norms for estimating the cost of equity are aware, is problematic for use in

21   estimating cost of equity at this time.

22   Several fundamental structural changes have transformed the energy utility

23   industry since the standard DCF model and its assumptions were developed. For

1 example, deregulation, accounting rule changes, changes in customer attitudes regarding

2 utility services, the evolution of alternative energy sources, highly volatile fuel prices, and

3 mergers-acquisitions have all influenced stock prices in ways that have deviated

4 substantially from the assumptions of the DCF model, which was first formulated in the

5 mid-1970s. These changes suggest that (1) some of the fundamental assumptions

6 underlying the standard DCF model, particularly that of constant growth and constant

7 relative market valuation, for example price/earnings (P/E) ratios and M/B ratios, are

8 problematic at this point in time for utility stocks, and (2) therefore, alternate

9 methodologies to estimate the cost of common equity should be accorded at least as much

10 weight as the DCF method.

11 Q. IS THE CONSTANT RELATIVE MARKET VALUATION ASSUMPTION

12 INHERENT IN THE DCF MODEL ALWAYS REASONABLE?

13 A. No, not always. Caution must be exercised when implementing the standard DCF model

14 in a mechanistic fashion, for it may fail to recognize changes in relative market valuations

15 over time. The traditional DCF model is not equipped to deal with surges in M/B and

16 P/E ratios. The standard DCF model assumes a constant market valuation multiple, that

17 is, a constant P/E ratio and a constant M/B ratio. Stated another way, the model assumes

18 that investors expect the ratio of market price to dividends (or earnings) in any given year

19 to be the same as the current ratio of market price to dividend (or earnings), and that the

20 stock price will grow at the same rate as the book value. This item is a necessary result of

21 the infinite growth assumption. This assumption is unrealistic under current conditions.

22 The DCF model is not equipped to deal with sudden surges in M/B and P/E ratios, as was

23 experienced by utility stocks in recent years.

1 Q. **WHAT IS YOUR RECOMMENDATION GIVEN SUCH MARKET**

2 **CONDITIONS?**

3 A. In short, caution and judgment are required in interpreting the results of the standard DCF

4 model because of (1) the effect of changes in risk and growth on natural gas utilities, (2)

5 the fragile applicability of the DCF model to utility stocks in the current capital market

6 environment, and (3) the practical difficulties associated with the growth component of

7 the standard DCF model. Hence, there is a clear need to go beyond the standard DCF

8 results and take into account the results produced by alternate methodologies in arriving

9 at a common equity recommendation.

10 Q. **DO THE ASSUMPTIONS UNDERLYING THE CAPM REQUIRE THAT THE**

11 **MODEL BE TREATED WITH CAUTION?**

12 A. Yes, as was the case with the DCF model, the assumptions underlying any model in the

13 social sciences, including the CAPM, are stringent. Moreover, the empirical validity of

14 the CAPM has been the subject of intense research in recent years. Although the CAPM

15 provides useful evidence, it must be complemented by other methodologies as well.

16 Q. **ARE THE ASSUMPTIONS UNDERLYING THE CAPM ANY MORE OR LESS**

17 **CONFINING THAN THOSE UNDERLYING THE DCF MODEL?**

18 A. I believe that the assumptions underlying the CAPM are less stringent than those

19 underlying the DCF theory. This becomes apparent if we view the CAPM as a special

20 case of the Arbitrage Pricing Model (APM), where the market portfolio is the only factor

21 affecting security prices. The assumptions underlying the APM are far less stringent than

22 the assumptions required for the DCF model to obtain. The APM derives from only two

23 major reasonable assumptions: that security returns are linear functions of several economic

1   factors, and that no profitable arbitrage opportunities exist since investors are able to

2   eliminate such opportunities through risk-free arbitrage transactions. The other assumptions

3   required by the APM are that investors are greedy and risk averse, that they can diversify

4   company-specific risks by holding large portfolios, and that enough investors possess

5   similar expectations to trigger the arbitrage process.

6   As a tool in the regulatory arena, the CAPM is a rigorous conceptual framework,

7   and is logical insofar as it is not subject to circularity problems, since its inputs are

8   objective, market-based quantities, largely immune to regulatory decisions. The data

9   requirements of the model are not prohibitive. The CAPM is one of several tools in the

10 arsenal of techniques to determine the cost of equity capital. Caution, appropriate training

11 in finance and econometrics, and judgment are required for its successful execution, as is

12 the case with the DCF and Risk Premium methodologies.

IV.   RISK PREMIUM ANALYSES

13 Q.   DR. MORIN, PLEASE PROVIDE AN OVERVIEW OF YOUR RISK PREMIUM

14   ANALYSES.

15 A.   In order to quantify the risk premium for DE-Ohio, I have performed five risk premium

16   studies. The first two studies deal with aggregate stock market risk premium evidence

17   using two versions of the CAPM methodology and the other three studies deal directly with

18   the regulated utility industry.

A.   CAPM ESTIMATES

19 Q.   PLEASE DESCRIBE YOUR APPLICATION OF THE CAPM RISK PREMIUM

20   APPROACH.

21 A.   My first two risk premium estimates are based on the CAPM and on an empirical

1 approximation to the CAPM (ECAPM). The CAPM is a fundamental paradigm of

2 finance. Simply put, the fundamental idea underlying the CAPM is that risk-averse

3 investors demand higher returns for assuming additional risk, and higher-risk securities

4 are priced to yield higher expected returns than lower-risk securities. The CAPM

5 quantifies the additional return, or risk premium, required for bearing incremental risk. It

6 provides a formal risk-return relationship anchored on the basic idea that only market risk

7 matters, as measured by beta. According to the CAPM, securities are priced such that

8 their:

9 EXPECTED RETURN = RISK-FREE RATE + RISK PREMIUM

10 Denoting the risk-free rate by R_F and the return on the securities market as a

11 whole by R_M, the CAPM is:

$$K = R_F + \beta (R_M - R_F)$$

13 This is the seminal CAPM expression, which states that the return required by

14 investors is made up of a risk-free component, R_F, plus a risk premium determined by β

15 ($R_M - R_F$). To derive the CAPM risk premium estimate, three quantities are required: the

16 risk-free rate (R_F), beta (β), and the market risk premium, ($R_M - R_F$). For the risk-free

17 rate, I used 5.3% based on the current level of long-term Treasury interest rates. For beta,

18 I used 0.89 and for the market risk premium ("MRP"), I used 7.4%. These inputs to the

19 CAPM are explained below.

20 Q. **WHAT RISK-FREE RATE DID YOU USE IN YOUR CAPM AND RISK**

21 **PREMIUM ANALYSES?**

22 A. To implement the CAPM and Risk Premium methods, an estimate of the risk-free return

23 is required as a benchmark. As a proxy for the risk-free rate, I have relied on the current

1   level of 30-year Treasury bond yields.

2   The appropriate proxy for the risk-free rate in the CAPM is the return on the

3 longest term Treasury bond possible. This is because common stocks are very long-term

4 instruments more akin to very long-term bonds rather than to short-term or intermediate-

5 term Treasury notes. In a risk premium model, the ideal estimate for the risk-free rate has

6 a term to maturity equal to the security being analyzed. Since common stock is a very

7 long-term investment because the cash flows to investors in the form of dividends last

8 indefinitely, the yield on the longest-term possible government bonds, that is the yield on

9 30-year Treasury bonds, is the best measure of the risk-free rate for use in the CAPM.

10 The expected common stock return is based on very long-term cash flows, regardless of

11 an individual's holding time period. Moreover, utility asset investments generally have

12 very long-term useful lives and should correspondingly be matched with very long-term

13 maturity financing instruments.

14   While long-term Treasury bonds are potentially subject to interest rate risk, this is

15 only true if the bonds are sold prior to maturity. A substantial fraction of bond market

16 participants, usually institutional investors with long-term liabilities (pension funds,

17 insurance companies), in fact hold bonds until they mature, and therefore are not subject

18 to interest rate risk. Moreover, institutional bondholders neutralize the impact of interest

19 rate changes by matching the maturity of a bond portfolio with the investment planning

20 period, or by engaging in hedging transactions in the financial futures markets. The

21 merits and mechanics of such immunization strategies are well documented by both

22 academicians and practitioners.

23   Another reason for utilizing the longest maturity Treasury bond possible is that

1   common equity has an infinite life span, and the inflation expectations embodied in its

2   market-required rate of return will therefore be equal to the inflation rate anticipated to

3   prevail over the very long-term. The same expectation should be embodied in the risk

4   free rate used in applying the CAPM model. It stands to reason that the yields on 30-year

5   Treasury bonds will more closely incorporate within their yield the inflation expectations

6   that influence the prices of common stocks than do short-term or intermediate-term U.S.

7   Treasury notes.

8   Among U.S. Treasury securities, 30-year Treasury bonds have the longest term to

9   maturity and the yield on such securities should be used as proxies for the risk-free rate in

10   applying the CAPM, provided there are no anomalous conditions existing in the 30-year

11   Treasury market. In the absence of such conditions, I have relied on the yield on 30-year

12   Treasury bonds in implementing the CAPM and risk premium methods.

    Q.   **DR. MORIN, WHY DID YOU REJECT SHORT-TERM INTEREST RATES AS PROXIES FOR THE RISK-FREE RATE IN IMPLEMENTING THE CAPM?**

13   A.   Short-term rates are volatile, fluctuate widely, and are subject to more random

14   disturbances than are long-term rates. Short-term rates are largely administered rates.

15   For example, Treasury bills are used by the Federal Reserve as a policy vehicle to

16   stimulate the economy and to control the money supply, and are used by foreign

17   governments, companies, and individuals as a temporary safe-house for money.

18   As a practical matter, it makes no sense to match the return on common stock to

19   the yield on 90-day Treasury Bills. This is because short-term rates, such as the yield on

20   90-day Treasury Bills, fluctuate widely, leading to volatile and unreliable equity return

21   estimates. Moreover, yields on 90-day Treasury Bills typically do not match the equity

1 investor's planning horizon. Equity investors generally have an investment horizon far in

2 excess of 90 days.

3   As a conceptual matter, short-term Treasury bill yields reflect the impact of

4 factors different from those influencing the yields on long-term securities such as

5 common stock. For example, the premium for expected inflation embedded into 90-day

6 Treasury Bills is likely to be far different than the inflationary premium embedded into

7 long-term securities yields. On grounds of stability and consistency, the yields on long-

8 term Treasury bonds match more closely with common stock returns.

9 Q. **WHAT IS THE CURRENT YIELD ON LONG-TERM U.S. TREASURY BONDS?**

10 A. The yield on U.S. Treasury 30-year bonds prevailing in June 2007, as reported in Value

11 Line and the Federal Reserve Bank Web site, is 5.3%. Accordingly, I use 5.3% as my

12 estimate of the risk-free rate component of the CAPM.

13 Q. **HOW DID YOU SELECT THE BETA FOR YOUR CAPM ANALYSIS?**

14 A. A major thrust of modern financial theory as embodied in the CAPM is that perfectly

15 diversified investors can eliminate the company-specific component of risk, and that only

16 market risk remains. The latter is technically known as "beta", or "systematic risk". The

17 beta coefficient measures the change in a security's return relative to that of the market.

18 The beta coefficient states the extent and direction of movement in the rate of return on a

19 stock relative to the movement in the rate of return on the market as a whole. The beta

20 coefficient indicates the change in the rate of return on a stock associated with a one

21 percentage point change in the rate of return on the market, and, thus, measures the

22 degree to which a particular stock shares the risk of the market as a whole. Modern

1 financial theory has established that beta incorporates several economic characteristics of

2 a corporation which are reflected in investors' return requirements.

3   Technically, the beta of a stock is a measure of the covariance of the return on the

4 stock with the return on the market as a whole. Accordingly, it measures dispersion in a

5 stock's return which cannot be reduced through diversification. In abstract theory for a

6 large diversified portfolio, dispersion in the rate of return on the entire portfolio is the

7 weighted sum of the beta coefficients of its constituent stocks.

8   DE-Ohio is not publicly traded and, therefore, proxies must be used for DE-Ohio.

9 As a first proxy for the Company's beta, I have examined the betas of a sample of widely-

10 traded investment-grade natural gas utilities covered by Value Line with at least 50% of

11 their revenues from natural gas utility operations. This group is examined in more detail

12 later in my testimony, in connection with the DCF estimates of the cost of common

13 equity. As displayed on page 1 of Attachment RAM-2, the average beta for the natural

14 gas group is currently 0.87.

15   As a second proxy for the Company's natural gas business, I examined the betas

16 of a sample of widely-traded investment-grade electric utilities designated as distribution

17 utilities by S&P and with at least 50% of their revenues from electric utility operations.

18 This group is examined in more detail later in my testimony, in connection with the DCF

19 estimates of the cost of common equity. As shown on page 2 of Attachment RAM-2, the

20 average beta of the distribution group is 0.91. Based on these results, I shall use the

21 average beta of the two groups, 0.89, as a beta estimate for DE-Ohio's natural gas

22 delivery operations.

23 Q. WHAT MRP ESTIMATE DID YOU USE IN YOUR CAPM ANALYSIS?

1 A. For the MRP, I used 7. 4%. This estimate was based on the results of both forward-

2 looking and historical studies of long-term risk premiums. First, the Ibbotson Associates

3 study, Stocks, Bonds, Bills, and Inflation, 2007 Yearbook, compiling historical returns

4 from 1926 to 2006, shows that a broad market sample of common stocks outperformed

5 long-term U. S. Treasury bonds by 6.5%. The historical MRP over the income

6 component of long-term Treasury bonds rather than over the total return is 7.1%.

7 Ibbotson Associates recommend the use of the latter as a more reliable estimate of the

8 historical MRP, and I concur with this viewpoint. The historical MRP should be

9 computed using the income component of bond returns because the intent, even using

10 historical data, is to identify an expected MRP. The more accurate way to estimate the

11 MRP from historic data is to use the income return, not total returns on government

12 bonds, as explained at pages 75-77 of Ibbotson Associates, Stocks, Bonds, Bills, and

13 Inflation: Valuation Edition, 2007 Yearbook. This is because the income component of

14 total bond return (i.e., the coupon rate) is a far better estimate of expected return than the

15 total return (i.e., the coupon rate + capital gain), as realized capital gains/losses are largely

16 unanticipated by bond investors. The long-horizon (1926-2005) MRP (based on income

17 returns, as required) is specifically calculated to be 7.1% rather than 6.5%.

18 Second, a DCF analysis applied to the aggregate equity market using Value Line's

19 aggregate stock market index and growth forecasts indicates a prospective MRP of 7.6%.

20 The average of the historical (7.1%) and prospective estimates (7.6%), which is 7.4%,

21 provides a reasonable estimate of the MRP.

22 **Historical Market Risk Premium**

1   Q.   **ON WHAT MATURITY BOND DOES THE IBBOTSON HISTORICAL RISK**

2   **PREMIUM DATA RELY ON?**

3   A.   Because 30-year bonds were not always traded or even available throughout the entire

4   1926-2005 period covered in the Ibbotson Associate Study of historical returns, the latter

5   study relied on bond return data based on 20-year Treasury bonds. To the extent that the

6   normal yield curve is virtually flat above maturities of 20 years over most of the period

7   covered in the Ibbotson study, the difference in yield is not material. In fact, the

8   difference in yield between 30-year and 20-year bonds is actually negative. The average

9   difference in yield over the 1977-2006 period is 13 basis points, that is, the yield on 20-

10   year bonds is slightly higher than the yield on 30-year bonds.

11   Q.   **WHY DID YOU USE LONG TIME PERIODS IN ARRIVING AT YOUR**

12   **HISTORICAL MRP ESTIMATE?**

13   A.   Because realized returns can be substantially different from prospective returns

14   anticipated by investors when measured over short time periods, it is important to employ

15   returns realized over long time periods rather than returns realized over more recent time

16   periods when estimating the MRP with historical returns. Therefore, a risk premium

17   study should consider the longest possible period for which data are available. Short-run

18   periods during which investors earned a lower risk premium than they expected are offset

19   by short-run periods during which investors earned a higher risk premium than they

20   expected. Only over long time periods will investor return expectations and realizations

21   converge.

22   I have therefore ignored realized risk premiums measured over short time periods,

23   since they are heavily dependent on short-term market movements. Instead, I relied on

1 results over periods of enough length to smooth out short-term aberrations, and to

2 encompass several business and interest rate cycles. The use of the entire study period in

3 estimating the appropriate MRP minimizes subjective judgment and encompasses many

4 diverse regimes of inflation, interest rate cycles, and economic cycles.

5 To the extent that the estimated historical equity risk premium follows what is

6 known in statistics as a "random walk," the best estimate of the future risk premium is the

7 historical mean. Since I found no evidence that the MRP in common stocks has changed

8 over time, that is, no significant serial correlation in the Ibbotson study, it is reasonable to

9 assume that these quantities will remain stable in the future.

10 **Prospective Market Risk Premium**

11 Q. **PLEASE DESCRIBE YOUR PROSPECTIVE APPROACH IN DERIVING THE**

12 **MRP IN THE CAPM ANALYSIS.**

13 A. For my prospective estimate of the MRP, I applied a DCF analysis to the aggregate equity

14 market using Value Line's VLIA software. The dividend yield on the dividend-paying

15 stocks that make up the Value Line Composite Index made up of over 7,000 stocks is

16 currently 0.26% (VLIA 05/2007 edition), and the average projected long-term growth rate

17 is 12.43%. Adding the dividend yield to the growth component produces an expected

18 return on the aggregate equity market of 12.69%. Following the tenets of the DCF model,

19 the spot dividend yield must be converted into an expected dividend yield by multiplying

20 it by one plus the growth rate. This brings the expected return on the aggregate equity

21 market to 12.72%. Recognition of the quarterly timing of dividend payments rather than

22 the annual timing of dividends assumed in the annual DCF model brings the MRP

23 estimate to approximately 12.92%. Subtracting the risk-free rate of 5.30% from the latter,

1   the implied risk premium is 7.62% over long-term U.S. Treasury bonds. The average of

2   the historical (7.1%) and prospective MRP (7.6%) estimates is 7.4%.

3   As a check on the MRP estimate, I examined a 2003 comprehensive article

4   published in Financial Management (see Harris, R. S., Marston, F. C., Mishra, D. R., and

5   O'Brien, T. J., "*Ex Ante* Cost of Equity Estimates of S&P 500 Firms: The Choice

6   Between Global and Domestic CAPM," Financial Management, Autumn 2003, pp. 51-

7   66).

8   These authors provide estimates of the prospective expected returns for S&P 500

9   companies over the period 1983-1998. They measure the expected rate of return (cost of

10 equity) of each dividend-paying stock in the S&P 500 for each month from January 1983

11 to August 1998 by using the constant growth DCF model. The prevailing risk-free rate

12 for each year was then subtracted from the expected rate of return for the overall market

13 to arrive at the market risk premium for that year. The table below, drawn from Table 2

14 of the aforementioned study, displays the average prospective risk premium estimate

15 (Column 2) for each year from 1983 to 1998. The average market risk premium estimate

16 for the overall period is 7.2%, which is very close to my own estimate of 7.4%.

	Year	DCF Market Risk Premium
1		
2		
3	1983	6.6%
4	1984	5.3%
5	1985	5.7%
6	1986	7.4%
7	1987	6.1%
8	1988	6.4%
9	1989	6.6%
10	1990	7.1%
11	1991	7.5%
12	1992	7.8%
13	1993	8.2%
14	1994	7.3%
15	1995	7.7%
16	1996	7.8%
17	1997	8.2%
18	1998	9.2%
19	MEAN	7.2%

20 Q. **WHAT IS YOUR RISK PREMIUM ESTIMATE OF DE-OHIO'S COST OF**

21 **EQUITY USING THE CAPM APPROACH?**

22 A. Inserting those input values in the CAPM equation, namely a risk-free rate of 5.3%, a beta

23 of 0.89, and a MRP of 7.4%, the CAPM estimate of the cost of common equity for DE-

24 Ohio is: 5.3% + 0.89 x 7.4% = 11.9%. This estimate becomes 12.1% with flotation costs.

25 The need for a flotation cost allowance is discussed later in my testimony.

26 Q. **WHAT IS YOUR RISK PREMIUM ESTIMATE USING THE EMPIRICAL**

27 **VERSION OF THE CAPM?**

28 A. There have been countless empirical tests of the CAPM in the finance literature in order

29 to determine to what extent security returns and betas are related in the manner predicted

30 by the CAPM. This literature is summarized in Chapter 13 of my 1994 book, Regulatory

31 Finance, and Chapter 6 of my latest book, The New Regulatory Finance, both published

32 by Public Utilities Report Inc. The results of the tests support the idea that beta is related

1   to security returns, that the risk-return tradeoff is positive, and that the relationship is

2   linear. The contradictory finding is that the risk-return tradeoff is not as steeply sloped as

3   the predicted CAPM. That is, empirical research has long shown that low-beta

4   securities earn returns somewhat higher than the CAPM would predict, and high-beta

5   securities earn less than predicted. A CAPM-based estimate of cost of capital

6   underestimates the return required from low-beta securities and overstates the return

7   required from high-beta securities, based on the empirical evidence. This is one of the

8   most well-known results in finance, and it is displayed graphically below.

CAPM: Predicted vs Observed Returns
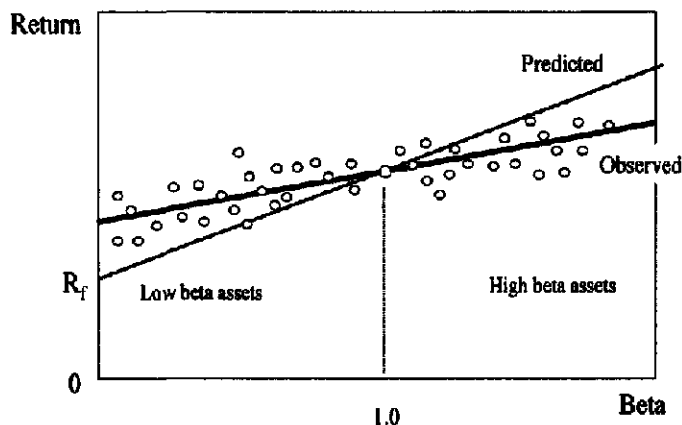
9   A number of variations on the original CAPM theory have been proposed to

10   explain this finding. The ECAPM makes use of these empirical findings. The

11   ECAPM estimates the cost of capital with the equation:

12    $$K = R_F + \alpha + \beta \times (MRP - \alpha)$$

13   where α is the "alpha" of the risk-return line, a constant, MRP is the market risk

14   premium $(R_M - R_F)$, and the other symbols are defined as usual. Inserting the long-

1   term risk-free rate as a proxy for the risk-free rate, an alpha in the range of 1% - 2%,

2   and reasonable values of beta and the MRP in the above equation produces results that

3   are indistinguishable from the following more tractable ECAPM expression:

4 $$K = R_F + 0.25\,(R_M - R_F) + 0.75\,\beta(R_M - R_F)$$

5   An alpha range of 1% - 2% is somewhat lower than that estimated empirically.

6   *The use of a lower value for alpha leads to a lower estimate of the cost of capital for*

7   low-beta stocks such as regulated utilities. This is because the use of a long-term risk-

8   free rate rather than a short-term risk-free rate already incorporates some of the desired

9   effect of using the ECAPM. That is, the long-term risk-free rate version of the CAPM

10   has a higher intercept and a flatter slope than the short-term risk-free version which has

11   been tested. This is also because the use of adjusted betas rather than the use of raw

12   betas also incorporates some of the desired effect of using the ECAPM. Thus, it is

13   reasonable to apply a conservative alpha adjustment.

14 Q.   **IS THE USE OF THE ECAPM CONSISTENT WITH THE USE OF ADJUSTED**

15   **BETAS?**

16 A.   Yes, it is. Some have argued that the use of the ECAPM is inconsistent with the use of

17   adjusted betas, such as those supplied by Value Line. This is because the reason for using

18   the ECAPM is to allow for the tendency of betas to regress toward the mean value of 1.00

19   over time, and, since Value Line betas are already adjusted for such trend, an ECAPM

20   analysis results in double-counting. This argument is erroneous. Fundamentally, the

21   ECAPM is not an adjustment, increase or decrease, in beta. This is obvious from the fact

22   that the observed return on high beta securities is actually lower than that produced by the

23   CAPM estimate. The ECAPM is a formal recognition that the observed risk-return

1   tradeoff is flatter than predicted by the CAPM based on myriad empirical evidence. The

2   ECAPM and the use of adjusted betas comprised two separate features of asset pricing.

3   Even if a company's beta is estimated accurately, the CAPM still understates the return

4   for low-beta stocks. Even if the ECAPM is used, the return for low-beta securities is

5   understated if the betas are understated. Referring back to the previous graph, the

6   ECAPM is a return (vertical axis) adjustment and not a beta (horizontal axis) adjustment.

7   Both adjustments are necessary. Moreover, the use of adjusted betas compensates for

8   interest rate sensitivity of utility stocks not captured by unadjusted betas, as explained in

9   Appendix A.

10   Appendix A contains a full discussion of the ECAPM, including its theoretical

11   and empirical underpinnings. In short, the following equation provides a viable

12   approximation to the observed relationship between risk and return, and provides the

13   following cost of equity capital estimate:

14 $$K = R_F + 0.25 (R_M - R_F) + 0.75 \beta (R_M - R_F)$$

15   Inserting 5.3% for the risk-free rate R_F, a MRP of 7.4% for $(R_M - R_F)$ and a beta of

16   0.89 in the above equation, the ROE is 12.2% without flotation costs and 12.4% with

17   flotation costs.

18   **Q.**   **DR. MORIN, PLEASE SUMMARIZE YOUR CAPM ESTIMATES.**

19   A.   The table below summarizes the common equity estimates obtained from my CAPM

20   studies. The average CAPM result is 12.3%.

CAPM	% ROE
CAPM plain	12.2%
Empirical CAPM	12.4%
AVERAGE	12.3%

B.   HISTORICAL RISK PREMIUM

1 Q.   PLEASE DESCRIBE YOUR HISTORICAL RISK PREMIUM ANALYSIS OF

2   THE NATURAL GAS UTILITY INDUSTRY.

3 A.   An historical risk premium for the natural gas utility industry was estimated with an

4   annual time series analysis applied to the natural gas utility industry as a whole, using

5   Moody's Natural Gas Distribution Index as an industry proxy. The analysis is depicted on

6   Attachment RAM-3. The risk premium was estimated by computing the actual return on

7   equity capital for Moody's Index for each year from 1955 to 2001 using the actual stock

8   prices and dividends of the index, and then subtracting the long-term government bond

9   return for that year. Data for this particular index was unavailable for periods prior to

10   1955 and data beyond 2001 were not readily available following the acquisition of

11   Moody's by Mergent.

12   As shown on Attachment RAM-3, the average risk premium over the period was

13   5.7% over long-term Treasury bonds. Given that long-term Treasury bond yields were

14   5.3% in June 2007, the implied cost of equity from this particular method is 5.3% + 5.7%

15   = 11.0% without flotation costs and 11.2% with flotation costs.

16 Q.   PLEASE DESCRIBE YOUR HISTORICAL RISK PREMIUM ANALYSIS OF THE

17   ELECTRIC UTILITY INDUSTRY.

18 A.   As a proxy for the risk premium applicable to the Company, I also estimated the historical

19   risk premium for the electric utility industry with an annual time series analysis applied to

20   the industry as a whole, using *Moody's Electric Utility Index* as an industry proxy. The

21   analysis is depicted on Attachment RAM-4. The risk premium was estimated by

22   computing the actual realized return on equity capital for Moody's Index for each year,

1   using the actual stock prices and dividends of the index, and then subtracting the long-

2   term government bond return for that year.

3   The historical risk premium analysis for the electric utility industry RAM-6 stops

4   in 2002 because the market data on the Moody's Electric Utility Index were discontinued

5   following the acquisition of Moody's by Mergent in 2002. I did examine more recent

6   historical bond return and equity return data based on the S&P Electric Utility Index

7   instead of Moody's Electric Utility Index. The addition of 2002-2005 data does not alter

8   the historical risk premium appreciably. This result is not surprising in view of the rising

9   equity market and low interest rate environment in the 2003-2005 period.

10   As shown on Attachment RAM-4, the average risk premium over the period was

11   5.5% over historical long-term Treasury bond returns. Given that the risk-free rate is

12   5.3%, the implied cost of equity for the average electric utility from this particular method

13   is 5.3% + 5.5% = 10.8% without flotation costs and 11.0% with flotation costs.

14   Q.   **DR. MORIN, ARE RISK PREMIUM STUDIES WIDELY USED?**

15   A.   Yes, they are. Risk Premium analyses are widely used by analysts, investors, and expert

16   witnesses. Most college-level corporate finance and/or investment management texts

17   including <u>Investments</u> by Bodie, Kane, and Marcus, McGraw-Hill Irwin, 2002, which is a

18   recommended textbook for CFA (Chartered Financial Analyst) certification and

19   examination, contain detailed conceptual and empirical discussion of the risk premium

20   approach. The latter is typically recommended as one of the three leading methods of

21   estimating the cost of capital. Professor Brigham's best-selling corporate finance

22   textbook (<u>Financial Management: Theory and Practice</u>, 11th ed., South-Western, 2005),

23   recommends the use of risk premium studies, among others. Techniques of risk premium

1   analysis are widespread in investment community reports. Professional certified financial

2   analysts are certainly well versed in the use of this method.

3 Q. **ARE YOU CONCERNED ABOUT THE DEGREE OF REALISM OF THE**

4   **ASSUMPTIONS THAT UNDERLIE THE HISTORICAL RISK PREMIUM**

5   **METHOD?**

6 A. No, I am not, for they are no more restrictive than the assumptions that underlie the DCF

7   model or the CAPM. While it is true that the method looks backward in time and

8   assumes that the risk premium is constant over time, these assumptions are not

9   necessarily restrictive. By employing returns realized over long time periods rather than

10   returns realized over more recent time periods, investor return expectations and

11   realizations converge. Realized returns can be substantially different from prospective

12   returns anticipated by investors, especially when measured over short time periods. By

13   ensuring that the risk premium study encompasses the longest possible period for which

14   data are available, short-run periods during which investors earned a lower risk premium

15   than they expected are offset by short-run periods during which investors earned a higher

16   risk premium than they expected. Only over long time periods will investor return

17   expectations and realizations converge, or else, investors would never invest any money.

C.   ALLOWED RISK PREMIUMS

18 Q. **PLEASE DESCRIBE YOUR ANALYSIS OF ALLOWED RISK PREMIUMS IN**

19   **THE NATURAL GAS UTILITY INDUSTRY.**

20 A. To estimate the Company's cost of common equity, I also examined the historical risk

21   premiums implied in the ROEs allowed by regulatory commissions for natural gas

22   utilities over the last decade relative to the contemporaneous level of the long-term

1   Treasury bond yield. This variation of the risk premium approach is reasonable because

2   allowed risk premiums are presumably based on the results of market-based

3   methodologies (DCF, Risk Premium, CAPM, *etc.*) presented to regulators in rate hearings

4   and on the actions of objective unbiased investors in a competitive marketplace.

5   Historical allowed ROE data are readily available over long periods on a quarterly basis

6   from Regulatory Research Associates ("RRA") and easily verifiable from RRA

7   publications and past commission decision archives. The average ROE spread over long-

8   term Treasury yields was 5.6% for the 1998-2007 time period, as shown in the graph

9   below. The currently allowed risk premium is also 5.6%. I note that this estimate is

10   nearly identical to the one obtained from the historical risk premium study of the natural

11   gas utility industry.

Allowed Risk Premium 1998-2007
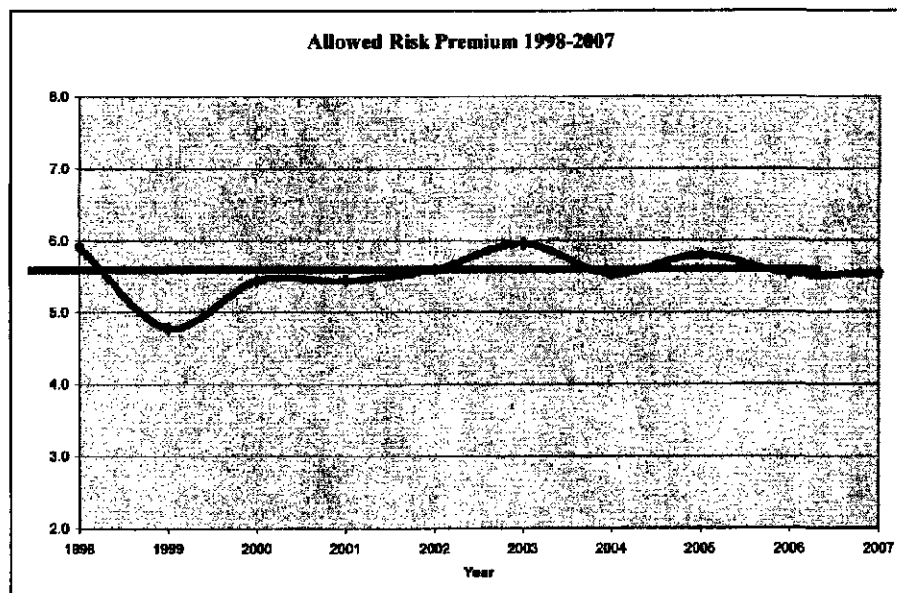
12

Given the current long-term Treasury bond yield of 5.3% and a risk premium of

5.6%, the implied allowed ROE for the average risk natural gas utility is 10.9%. No

flotation cost adjustment is required here since the return figures are allowed book returns

on common equity capital.

1 Q. **WHY DID YOU RELY ON THE LAST DECADE TO CONDUCT YOUR**

2   **ALLOWED RISK PREMIUM ANALYSIS?**

3 A. Because allowed returns already reflect investor expectations, that is, are forward-looking

4   in nature, the need for relying on long historical periods is minimized. The last decade is

5   a reasonable period of analysis in the case of allowed returns in view of the stability of

6   the inflation rate experienced over the last decade.

7 Q. **DO INVESTORS TAKE INTO ACCOUNT ALLOWED RETURNS IN**

8   **FORMULATING THEIR RETURN EXPECTATIONS?**

9 A. Yes, they do. Investors do take into account returns granted by various regulators in

10   formulating their risk and return expectations, as evidenced by the availability of

11   commercial publications disseminating such data, including Value Line and RRA.

12   Allowed returns, while certainly not a precise indication of a particular company's cost of

13   equity capital, are nevertheless an important determinant of investor growth perceptions

14   and investor expected returns.

15 Q. **PLEASE SUMMARIZE YOUR RISK PREMIUM ESTIMATES.**

16 A. The table below summarizes the ROE estimates obtained from the three risk premium

17   studies. The average risk premium result is 11.1%.

18

Risk Premium Method	ROE
Historical Risk Premium Natural Gas	11.2%
Historical Risk Premium Electric	11.0%
Allowed Risk Premium	10.9%

22

D. DCF ESTIMATES

1

2 **Q. PLEASE DESCRIBE THE DCF APPROACH TO ESTIMATING THE COST OF**

3 **EQUITY CAPITAL.**

4 A. According to DCF theory, the value of any security to an investor is the expected

5 discounted value of the future stream of dividends or other benefits. One widely used

6 method to measure these anticipated benefits in the case of a non-static company is to

7 examine the current dividend plus the increases in future dividend payments expected by

8 investors. This valuation process can be represented by the following formula, which is

9 the standard DCF model:

10 $$K_e = D_1/P_0 + g$$

11 where: K_e = investors' expected return on equity

12 D_1 = expected dividend at the end of the coming year

13 P_0 = current stock price

14 g = expected growth rate of dividends, earnings,

15 stock price,

16 book value

17 The standard DCF formula states that under certain assumptions, which are

18 described in the next paragraph, the equity investor's expected return, K_e, can be viewed

19 as the sum of an expected dividend yield, D_1/P_0, plus the expected growth rate of future

20 dividends and stock price, g. The returns anticipated at a given market price are not

21 directly observable and must be estimated from statistical market information. The idea

22 of the market value approach is to infer 'K_e' from the observed share price, the observed

23 dividend, and an estimate of investors' expected future growth.

1   The assumptions underlying this valuation formulation are well known, and are

2   discussed in detail in Chapter 4 of my reference book, Regulatory Finance, and Chapter 8 of

3   my latest textbook, The New Regulatory Finance. The standard DCF model requires the

4   following main assumptions: a constant average growth trend for both dividends and

5   earnings, a stable dividend payout policy, a discount rate in excess of the expected growth

6   rate, and a constant price-earnings multiple, which implies that growth in price is

7   synonymous with growth in earnings and dividends. The standard DCF model also

8   assumes that dividends are paid at the end of each year when, in fact, dividend payments are

9   normally made on a quarterly basis.

10   Q.   HOW DID YOU ESTIMATE DE-OHIO'S COST OF EQUITY WITH THE DCF

11   MODEL?

12   A.   I applied the DCF model to two proxies for DE-Ohio's natural gas delivery operations: a

13   group consisting of investment-grade dividend-paying electric distribution utilities and a

14   group consisting of those electric utilities that make up Moody's Electric Utility Index.

15   In order to apply the DCF model, two components are required: the expected

16   dividend yield (D_1/P_0) and the expected long-term growth (g). The expected dividend D_1

17   in the annual DCF model can be obtained by multiplying the current indicated annual

18   dividend rate by the growth factor $(1 + g)$.

19   From a conceptual viewpoint, the stock price to employ in calculating the

20   dividend yield is the current price of the security at the time of estimating the cost of

21   equity. The reason is that current stock price provides a better indication of expected

22   future prices than any other price in an efficient market. An efficient market implies that

23   prices adjust rapidly to the arrival of new information. Therefore, the current price

1   reflects the fundamental economic value of a security. A considerable body of empirical

2   evidence indicates that capital markets are efficient with respect to a broad set of

3   information. This evidence implies that observed current prices represent the

4   fundamental value of a security, and that a cost of capital estimate should be based on

5   current prices.

6   In implementing the DCF model, I have used the current dividend yields reported

7   in the latest edition of Value Line's VLIA software. Basing dividend yields on average

8   results from a large group of companies reduces the concern that idiosyncrasies of

9   individual company stock prices will result in an unrepresentative dividend yield.

10   Q.   **HOW DID YOU ESTIMATE THE GROWTH COMPONENT OF THE DCF**

11   **MODEL?**

12   A.   The principal difficulty in calculating the required return by the DCF approach is in

13   ascertaining the growth rate that investors currently expect. Since no explicit estimate of

14   expected growth is observable, proxies must be employed.

15   As proxies for expected growth, I examined growth estimates developed by

16   professional analysts employed by large investment brokerage institutions. Projected

17   long-term growth rates actually used by institutional investors to determine the

18   desirability of investing in different securities influence investors' growth anticipations.

19   These forecasts are made by large reputable organizations, and the data are readily

20   available to investors and are representative of the consensus view of investors. Because

21   of the dominance of institutional investors in investment management and security

22   selection, and their influence on individual investment decisions, analysts' growth

23   forecasts influence investor growth expectations and provide a sound basis for estimating

1 the cost of equity with the DCF model. Growth rate forecasts of analysts are available

2 from published investment newsletters and from systematic compilations of analysts'

3 forecasts, such as those tabulated by Zacks Investment Research Inc. ("Zacks"). I used

4 analysts' long-term growth forecasts contained in Zacks as proxies for investors' growth

5 expectations in applying the DCF model. I also used Value Line's growth forecast as an

6 additional proxy.

7 Q. **WHY DID YOU REJECT THE USE OF HISTORICAL GROWTH RATES IN**

8 **APPLYING THE DCF MODEL TO UTILITIES?**

9 A. I have rejected historical growth rates as proxies for expected growth in the DCF

10 calculation because historical growth patterns are already incorporated in analysts' growth

11 forecasts that should be used in the DCF model, and are therefore somewhat redundant.

12 Q. **DID YOU CONSIDER ANY OTHER METHOD OF ESTIMATING EXPECTED**

13 **GROWTH IN THE DCF MODEL?**

14 A. Yes, I did. I considered using the so-called "sustainable growth" method, also referred to

15 as the "retention growth" method. According to this method, future growth is estimated

16 by multiplying the fraction of earnings expected to be retained by the company, 'b', by the

17 expected return on book equity, 'ROE', as follows:

18 $$g = b \times ROE$$

19 where: g = expected growth rate in earnings/dividends

20 b = expected retention ratio

21 ROE = expected return on book equity

22 However, I do not generally subscribe to the growth results produced by this

23 particular method for several reasons. First, the sustainable method of predicting growth

1   is only accurate under the assumptions that the ROE is constant over time and that no

2   new common stock is issued by the company, or if so, it is sold at book value. Second,

3   and more importantly, the sustainable growth method contains a logic trap: the method

4   requires an estimate of ROE to be implemented. But if the ROE input required by the

5   model differs from the recommended return on equity, a fundamental contradiction in

6   logic follows. Third, the empirical finance literature demonstrates that the sustainable

7   growth method of determining growth is not as significantly correlated to measures of

8   value, such as stock prices and price/earnings ratios, as analysts' growth forecasts. I

9   therefore placed no reliance on this method.

10 Q. **DID YOU CONSIDER DIVIDEND GROWTH IN APPLYING THE DCF**

11 **MODEL?**

12 A. No, not at this time. The reason is that it is widely expected that utilities will continue to

13 lower their dividend payout ratio over the next several years. In other words, earnings are

14 expected to grow faster than dividends in the future.

15 Whenever the dividend payout ratio is expected to change, the intermediate

16 growth rate in dividends cannot equal the long-term growth rate, because

17 dividend/earnings growth must adjust to the changing payout ratio. The assumptions of

18 constant perpetual growth and constant payout ratio are clearly not met. Thus, the

19 implementation of the standard DCF model is of questionable relevance in this

20 circumstance.

21 Dividend growth rates are unlikely to provide a meaningful guide to investors'

22 growth expectations for utilities in general. This result is because utilities' dividend

23 policies have become increasing conservative as business risks in the industry have

1   intensified steadily. Dividend growth has remained largely stagnant in past years as

2   utilities are increasingly conserving financial resources in order to hedge against rising

3   business risks. As a result, investors' attention has shifted from dividends to earnings.

4   Therefore, earnings growth provides a more meaningful guide to investors' long-term

5   growth expectations. Indeed, it is growth in earnings that will support future dividends

6   and share prices.

7   Q.   IS THERE ANY EMPIRICAL EVIDENCE DOCUMENTING THE

8   IMPORTANCE OF EARNINGS IN EVALUATING INVESTORS'

9   EXPECTATIONS IN THE INVESTMENT COMMUNITY?

10   A.   Yes, there is an abundance of evidence attesting to the importance of earnings in

11   assessing investors' expectations. First, the sheer volume of earnings forecasts available

12   from the investment community relative to the scarcity of dividend forecasts attests to

13   their importance. To illustrate, Value Line, Zacks Investment, First Call Thompson, and

14   Multex provide comprehensive compilations of investors' earnings forecasts, to name

15   some. The fact that these investment information providers focus on growth in earnings

16   rather than growth in dividends indicates that the investment community regards earnings

17   growth as a superior indicator of future long-term growth. Second, Value Line's

18   principal investment rating assigned to individual stocks, Timeliness Rank, is based

19   primarily on earnings, which account for 65% of the ranking.

20   Q.   WHAT DCF RESULTS DID YOU OBTAIN FOR THE NATURAL GAS

21   UTILITIES GROUP?

22   A.   As a proxy for DE-Ohio's natural gas business, I have examined the expected returns of

23   investment-grade dividend-paying natural gas distribution utilities contained in Value

1   Line's natural gas distribution universe with a market value in excess of $300 million and

2   with at least 50% of their revenues from regulated natural gas operations. The group is

3   shown in Attachment RAM-5.

4   As shown on Column 4 of Attachment RAM-5, the average long-term growth

5   forecast obtained from the Zacks corporate earnings database is 4.3% for the natural gas

6   distribution group. Combining this growth rate with the average expected dividend yield

7   of 3.7% shown in Column 5 produces an estimate of equity costs of 8.1% for the gas

8   distribution group. Recognition of flotation costs brings the cost of equity estimate to

9   8.3%, shown in Column 6. Because the cost of equity cannot be less than a company's

10 cost of debt, it is not unreasonable to remove Nicor from the group, and the resulting

11 average without Nicor is 8.5%.

12   I find the growth rate of 4.3% in this particular DCF analysis outside reasonable

13 limits of probability, given that it is less than the long-term growth of the U.S. economy.

14 One would reasonably think that the long-term growth of the natural gas utility industry

15 would at least track that of the U.S. economy, namely, a range of 5.5% - 6.0%.

16   Repeating the exact same procedure, only this time using Value Line's long-term

17 earnings growth forecast of 5.1% instead of the Zacks consensus growth forecast, the cost

18 of equity for gas distribution group is 8.9%, unadjusted for flotation costs. Adding an

19 allowance for flotation costs brings the cost of equity estimate to 9.1%. This analysis is

20 displayed on Attachment RAM-6. As was the case earlier for Nicor, because the cost of

21 equity cannot be less than a company's cost of debt, it is not unreasonable to remove

22 WGL Holdings from the group, and the resulting average without WGL Holdings is

23 9.4%.

1   Q.   PLEASE DESCRIBE YOUR SECOND PROXY GROUP FOR THE COMPANY'S

2   NATURAL GAS DISTRIBUTION BUSINESS?

3   A.   It is reasonable to postulate that the Company's natural gas utility operations possess an

4   investment risk profile similar to today's electricity distribution utility business. Electric

5   utility operations are reasonable proxies for natural gas distribution utilities, for they

6   possess economic characteristics similar to those of natural gas utilities. They are both

7   involved in the transmission-distribution of energy services products at regulated rates in

8   a cyclical and weather-sensitive market. They both employ a capital-intensive network

9   with similar physical characteristics. They are both subject to rate of return regulation

10   and have enjoyed virtually identical allowed rates of return, attesting to their risk

11   comparability.

12   For my second proxy group of companies, I have therefore examined a group of

13   investment-grade utilities designated as electricity distribution utilities by S&P in a recent

14   comprehensive analysis of utility business risks. The original group is shown on Pages 1

15   - 2 of Attachment RAM-7, and includes natural gas and electricity distribution operating

16   companies engaged in predominantly monopolistic distribution activities. Foreign

17   companies and companies below investment-grade, that is, companies with a bond rating

18   below BBB-, were eliminated as well as those companies without Value Line coverage.

19   Page 3 of Attachment RAM-7 narrows the group down to only include electricity

20   distribution utilities. The final sample of 12 companies is made up of the parent company

21   of these investment-grade operating electricity distribution companies with at least 50%

22   of their revenues from regulated operations, as shown on Page 4 of Attachment RAM-7.

23   The initial group was utilized earlier in connection with beta estimates. The same group

1		was retained for the DCF analysis.
2	Q.	WHAT DCF RESULTS DID YOU OBTAIN FOR THE ELECTRICITY
3		DISTRIBUTION UTILITIES GROUP USING THE VALUE LINE GROWTH?
4	A.	As shown on Column 2 of Attachment RAM-8, the average long-term growth forecast
5		obtained from Value Line is 6.3% for this group. Combining this growth rate with the
6		average expected dividend yield of 3.7% shown in Column 3 produces an estimate of
7		equity costs of 10.0% for the group, unadjusted for flotation costs. Adding an allowance
8		for flotation costs to the results of Column 4 brings the cost of equity estimate to 10.2%,
9		shown in Column 5. Removing CH Energy from the group on account of its cost of
10		equity estimate being less than its cost of long-term debt, the average ROE is 10.6%.
11	Q.	WHAT DCF RESULTS DID YOU OBTAIN FOR THE ELECTRICITY
12		DISTRIBUTION UTILITIES GROUP USING THE ANALYST'S CONSENSUS
13		GROWTH FORECAST?
14	A.	From the original sample of 12 companies shown on page 1 of Attachment RAM-9, CH
15		Energy was eliminated as no analysts' growth forecasts was available from Zacks. For
16		the remaining 11 companies, using the consensus analysts' earnings growth forecast
17		published by Zacks of 7.9% instead of the Value Line forecast, the cost of equity for the
18		group is 11.5%. Allowance for flotation costs brings the cost of equity estimate to 11.7%.
19		This analysis is shown on page 2 of Attachment RAM-9. In order to palliate the
20		influence of the three companies with high growth estimates of 13% (Northeast Utilities,
21		PPL Corp, and Public Service), the median estimate of 10.5% is a more reasonable
22		estimate.
23	Q.	PLEASE SUMMARIZE YOUR DCF ESTIMATES.

1   A.   The table below summarizes my DCF estimates for DE-Ohio. The average DCF estimate

2   is 9.8%.

DCF STUDY	ROE
Natural Gas Utilities Value Line Growth	8.5%
Natural Gas Utilities Zacks Growth	9.4%
Electricity Distribution Utilities Value Line Growth	10.6%
Electricity Distribution Utilities Zacks Growth	10.5%
Average	9.8%

3

4   Q.   **DO DCF RESULTS UNDERSTATE THE COST OF EQUITY FOR DE-OHIO?**

5   A.   Yes, they do. As discussed at length earlier, application of the standard DCF model to

6   utility stocks significantly understates the investor's expected return when the M/B ratio

7   of a given stock exceeds 1.0, as is the case presently.

8   Q.   **DR. MORIN, PLEASE NOW TURN TO THE NEED FOR A FLOTATION COST**

9   **ALLOWANCE.**

10   A.   All the market-based estimates reported above include an adjustment for flotation costs.

11   The simple fact of the matter is that common equity capital is not free. Flotation costs

12   associated with stock issues are exactly like the flotation costs associated with bonds and

13   preferred stocks. Flotation costs are incurred; they are not expensed at the time of issue

14   and, therefore, must be recovered via a rate of return adjustment. This treatment is done

15   routinely for bond and preferred stock issues by most regulatory commissions, including

16   FERC. Clearly, the common equity capital accumulated by the Company is not cost-free.

17   The flotation cost allowance to the cost of common equity capital is discussed and

18   applied in most corporate finance textbooks; it is unreasonable to ignore the need for such

19   an adjustment.

1   Flotation costs are very similar to the closing costs on a home mortgage. In the

2   case of issues of new equity, flotation costs represent the discounts that must be provided

3   to place the new securities. Flotation costs have a direct and an indirect component. The

4   direct component is the compensation to the security underwriter for his

5   marketing/consulting services, for the risks involved in distributing the issue, and for any

6   operating expenses associated with the issue (printing, legal, prospectus, *etc.*). The

7   indirect component represents the downward pressure on the stock price as a result of the

8   increased supply of stock from the new issue. The latter component is frequently referred

9   to as "market pressure."

10   Investors must be compensated for flotation costs on an ongoing basis to the

11   extent that such costs have not been expensed in the past, and therefore the adjustment

12   must continue for the entire time that these initial funds are retained in the firm.

13   Appendix B to my testimony discusses flotation costs in detail, and shows: (1) why it is

14   necessary to apply an allowance of 5% to the dividend yield component of equity cost by

15   dividing that yield by 0.95 (100% - 5%) to obtain the fair return on equity capital; (2) why

16   the flotation adjustment is permanently required to avoid confiscation even if no further

17   stock issues are contemplated; and (3) that flotation costs are only recovered if the rate of

18   return is applied to total equity, including retained earnings, in all future years.

19   By analogy, in the case of a bond issue, flotation costs are not expensed but are

20   amortized over the life of the bond, and the annual amortization charge is embedded in

21   the cost of service. The flotation adjustment is also analogous to the process of

22   depreciation, which allows the recovery of funds invested in utility plant. The recovery

23   of bond flotation expense continues year after year, irrespective of whether the Company

1 issues new debt capital in the future, until recovery is complete, in the same way that the

2 recovery of past investments in plant and equipment through depreciation allowances

3 continues in the future even if no new construction is contemplated. In the case of

4 common stock that has no finite life, flotation costs are not amortized. Thus, the recovery

5 of flotation cost requires an upward adjustment to the allowed return on equity.

6 A simple example will illustrate the concept. A stock is sold for $100, and

7 investors require a 10% return, that is, $10 of earnings. But if flotation costs are 5%, the

8 Company nets $95 from the issue, and its common equity account is credited by $95. In

9 order to generate the same $10 of earnings to the shareholders, from a reduced equity

10 base, it is clear that a return in excess of 10% must be allowed on this reduced equity

11 base, here 10.52%.

12 According to the empirical finance literature discussed in Appendix B, total

13 flotation costs amount to 4% for the direct component and 1% for the market pressure

14 component, for a total of 5% of gross proceeds. This in turn amounts to approximately

15 30 basis points, depending on the magnitude of the dividend yield component. To

16 illustrate, dividing the average expected dividend yield of approximately 5.0% for utility

17 stocks by 0.95 yields 5.3%, which is 30 basis points higher.

18 Sometimes, the argument is made that flotation costs are real and should be

19 recognized in calculating the fair return on equity, but only at the time when the expenses

20 are incurred. In other words, the flotation cost allowance should not continue

21 indefinitely, but should be made in the year in which the sale of securities occurs, with no

22 need for continuing compensation in future years. This argument is valid only if the

23 Company has already been compensated for these costs. If not, the argument is without

DR. ROGER A. MORIN DIRECT

1 merit. My own recommendation is that investors be compensated for flotation costs on

2 an on-going basis rather than through expensing and that the flotation cost adjustment

3 continue for the entire time that these initial funds are retained in the firm.

4 There are several sources of equity capital available to a firm including: common

5 equity issues, conversions of convertible preferred stock, dividend reinvestment plan,

6 employees' savings plan, warrants, and stock dividend programs. Each item carries its

7 own set of administrative costs and flotation cost components, including discounts,

8 commissions, corporate expenses, offering spread, and market pressure. The flotation

9 cost allowance is a composite factor that reflects the historical mix of sources of equity.

10 The allowance factor is a build-up of historical flotation cost adjustments associated and

11 traceable to each component of equity at its source. It is impractical and prohibitively

12 costly to start from the inception of a company and determine the source of all present

13 equity. A practical solution is to identify general categories and assign one factor to each

14 category. My recommended flotation cost allowance is a weighted average cost factor

15 designed to capture the average cost of various equity vintages and types of equity capital

16 raised by the Company.

17 Q. **IS A FLOTATION COST ADJUSTMENT REQUIRED FOR AN OPERATING**

18 **SUBSIDIARY LIKE DE-OHIO THAT DOES NOT TRADE PUBLICLY?**

19 A. Yes, it is. It is sometimes alleged that a flotation cost allowance is inappropriate if the

20 utility is a subsidiary whose equity capital is obtained from its parent, in this case, Duke

21 Energy. This objection is unfounded since the parent-subsidiary relationship does not

22 eliminate the costs of a new issue, but merely transfers them to the parent. It would be

23 unfair and discriminatory to subject parent shareholders to dilution while individual

1 shareholders are absolved from such dilution. Fair treatment must consider that, if the

2 utility-subsidiary had gone to the capital markets directly, flotation costs would have been

3 incurred.

V. SUMMARY OF COST OF EQUITY RECOMMENDATION

4 **Q. PLEASE SUMMARIZE YOUR RESULTS AND RECOMMENDATION.**

5 A. To arrive at my final recommendation, I performed five risk premium analyses. For the

6 first two risk premium studies, I applied the CAPM and an empirical approximation of

7 the CAPM using current market data. The other three risk premium analyses were

8 performed on historical and allowed risk premium data from natural gas and electric

9 utility industry aggregate data. I also performed DCF analyses on two surrogates for the

10 Company's natural gas delivery business. They are: a group of investment-grade natural

11 gas distribution utilities and a group of investment-grade electricity distribution utilities.

12 The average results from the three principal methodologies are as follows:

13
14   CAPM   12.3%
15   Risk Premium 11.1%
16   DCF   9.8%
17   AVERAGE   11.0%

18 The results range from 9.8% to 12.3%, with a midpoint of 11.0%. The overall

19 average result from all the methodologies is also 11.0%.

20 **Q. DID YOU ADJUST THESE RESULTS TO ACCOUNT FOR THE FACT THAT DE-**

21 **OHIO'S RISK PROFILE DIFFERS FROM THE AVERAGE NATURAL GAS**

22 **UTILITY?**

23 A. No, I did not. The Company's investment risk is average in my view, as evidenced by its

24 average utility bond rating and average Business Risk score on Standard & Poor's

25 business risk continuum. Because the cost of equity estimates derived from the various

1   comparable groups reflect the risk of the average utility and because DE-Ohio's

2   investment risks are comparable to those of the industry, the expected equity returns

3   developed above are applicable to DE-Ohio.

4   Q.   DR. MORIN, WHAT IS YOUR FINAL CONCLUSION REGARDING DE-OHIO'S

5   COST OF COMMON EQUITY CAPITAL?

6   A.   Based on the results of all my analyses, the application of my professional judgment, and

7   the risk circumstances of DE-Ohio, it is my opinion that a just and reasonable return on

8   the common equity capital of DE-Ohio's natural gas distribution operations in the state of

9   Ohio is 11.0%.   My recommended rate of return reflects the application of my

10   professional judgment to the results in light of the indicated returns from my Risk

11   Premium, CAPM, and DCF analyses.   Moreover, my recommended return is predicated

12   on the assumption that the Commission will approve the continuation of the Company's

13   Accelerated Main Replacement Program ("AMRP") and the Company's sales decoupling

14   proposal.   Absent this risk-mitigating mechanism, my recommended return would be

15   significantly higher.   My recommended ROE also assumes the approval of the

16   Company's test year capital structure.

17   Q.   IS THERE A RELATIONSHIP BETWEEN FINANCIAL RISK AND THE

18   AUTHORIZED ROE?   .

19   A.   There certainly is. A low authorized ROE increases the likelihood the utility will have to

20   rely increasingly on debt financing for its capital needs.   This creates the specter of a

21   spiraling cycle that further increases risks to both equity and debt investors; the resulting

22   increase in financing costs is ultimately borne by the utility's customers through higher

23   capital costs and rates of returns.

1 Q. FINALLY, DR. MORIN, IF CAPITAL MARKET CONDITIONS CHANGE

2   SIGNIFICANTLY BETWEEN THE DATE OF FILING YOUR PREPARED

3   TESTIMONY AND THE DATE YOUR ORAL TESTIMONY IS PRESENTED,

4   WOULD THIS CAUSE YOU TO REVISE YOUR ESTIMATED COST OF

5   EQUITY?

6 A. Yes. Interest rates and security prices do change over time, and risk premiums change

7   also, although much more sluggishly. If substantial changes were to occur between the

8   filing date and the time my oral testimony is presented, I will update my testimony

9   accordingly.

10 Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?

11 A. Yes, it does.

APPENDIX A
CAPM, EMPIRICAL CAPM

The Capital Asset Pricing Model (CAPM) is a fundamental paradigm of finance. Simply put, the fundamental idea underlying the CAPM is that risk-averse investors demand higher returns for assuming additional risk, and higher-risk securities are priced to yield higher expected returns than lower-risk securities. The CAPM quantifies the additional return, or risk premium, required for bearing incremental risk. It provides a formal risk-return relationship anchored on the basic idea that only market risk matters, as measured by beta. According to the CAPM, securities are priced such that their:

$$EXPECTED\ RETURN\ =\ RISK\text{-}FREE\ RATE\ +\ RISK\ PREMIUM$$

Denoting the risk-free rate by R_F and the return on the market as a whole by R_M, the CAPM is:

$$K\ =\ R_F\ +\ \beta(R_M - R_F) \tag{1}$$

Equation 1 is the CAPM expression which asserts that an investor expects to earn a return, K, that could be gained on a risk-free investment, R_F, plus a risk premium for assuming risk, proportional to the security's market risk, also known as beta, β, and the market risk premium, $(R_M - R_F)$, where R_M is the market return . The market risk premium $(R_M - R_F)$ can be abbreviated MRP so that the CAPM becomes:

$$K\ =\ R_F\ +\ \beta \times MRP \tag{2}$$

The CAPM risk-return relationship is depicted in the figure below and is typically labeled as the Security Market Line (SML) by the investment community.

CAPM and Risk - Return
in Capital Markets

Return

Market Risk Premium

R_f

R_f = Risk-free rate

SML

Treasury Bills — Corporate Bonds — Utility Stock — Average Stock

Beta Risk

Average Stock
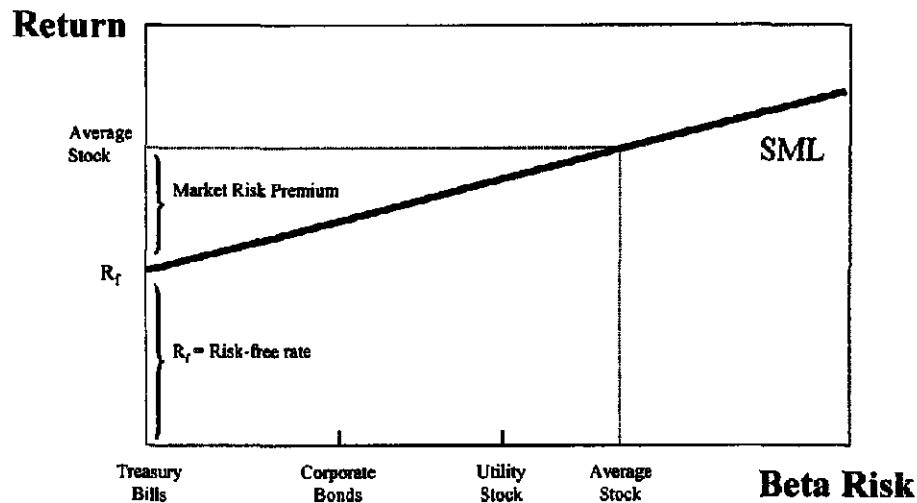
A myriad empirical tests of the CAPM have shown that the risk-return tradeoff is not as steeply sloped as that predicted by the CAPM, however. That is, low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted. In other words, the CAPM tends to overstate the actual sensitivity of the cost of capital to beta: low-beta stocks tend to have higher returns and high-beta stocks tend to have lower risk returns than predicted by the CAPM. The difference between the CAPM and the type of relationship observed in the empirical studies is depicted in the figure below. This is one of the most widely known empirical findings of the finance literature. This extensive literature is summarized in Chapter 13 of Dr. Morin's book [Regulatory Finance, Public Utilities Report Inc., Arlington, VA, 1994].

Risk vs Return
Theory vs. Practice
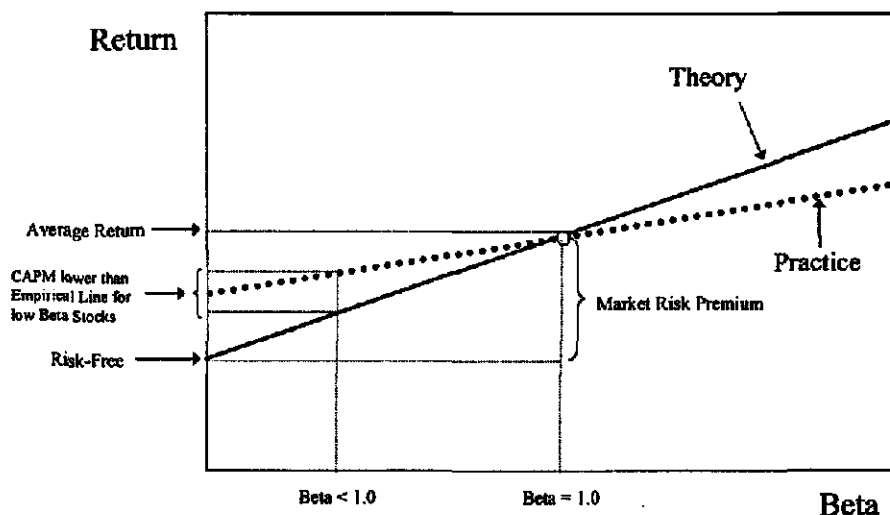
A number of refinements and expanded versions of the original CAPM theory have been proposed to explain the empirical findings. These revised CAPMs typically produce a risk-return relationship that is flatter than the standard CAPM prediction. The following equation makes use of these empirical findings by flattening the slope of the risk-return relationship and increasing the intercept:

$$K = R_F + \alpha + \beta (MRP - \alpha) \qquad (3)$$

where α is the "alpha" of the risk-return line, a constant determined empirically, and the other symbols are defined as before. Alternatively, Equation 3 can be written as follows:

$$K = R_F + a MRP + (1-a) \beta MRP \qquad (4)$$

where a is a fraction to be determined empirically. Comparing Equations 3 and 4, it is easy to see that alpha equals 'a' times MRP, that is, $\alpha = a \times MRP$

Theoretical Underpinnings

The obvious question becomes what would produce a risk return relationship which is flatter than the CAPM prediction, or in other words, how do you explain the presence of "alpha" in the above equation.

3

The exclusion of variables aside from beta would produce this result. Three such variables are noteworthy: dividend yield, skewness, and hedging potential.

The dividend yield effects stem from the differential taxation on corporate dividends and capital gains. The standard CAPM does not consider the regularity of dividends received by investors. Utilities generally maintain high dividend payout ratios relative to the market, and by ignoring dividend yield, the CAPM provides biased cost of capital estimates. To the extent that dividend income is taxed at a higher rate than capital gains, investors will require higher pre-tax returns in order to equalize the after-tax returns provided by high-yielding stocks (e.g. utility stocks) with those of low-yielding stocks. In other words, high-yielding stocks must offer investors higher pre-tax returns. Even if dividends and capital gains are undifferentiated for tax purposes, there is still a tax bias in favor of earnings retention (lower dividend payout), as capital gains taxes are paid only when gains are realized.

Empirical studies by Litzenberger and Ramaswamy (1979) and Litzenberger et al. (1980) find that security returns are positively related to dividend yield as well as to beta. These results are consistent with after-tax extensions of the CAPM developed by Breenan (1973) and Litzenberger and Ramaswamy (1979) and suggest that the relationship between return, beta, and dividend yield should be estimated and employed to calculate the cost of equity capital.

As far as skewness is concerned, investors are more concerned with losing money than with total variability of return. If risk is defined as the probability of loss, it appears more logical to measure risk as the probability of achieving a return which is below the expected return. The traditional CAPM provides downward-biased estimates of cost of capital to the extent that these skewness effects are significant. As shown by Kraus and Litzenberger (1976), expected return depends on both on a stock's systematic risk (beta) and the systematic skewness. Empirical studies by Kraus and Litzenberger (1976), Friend, Westerfield, and Granito (1978), and Morin (1981) found that, in addition to beta, skewness of returns has a significant negative relationship with security returns. This result is consistent with the skewness version of the CAPM developed by Rubinstein (1973) and Kraus and Litzenberger (1976).

This is particularly relevant for public utilities whose future profitability is constrained by the regulatory process on the upside and relatively unconstrained on the downside in the face of socio-political realities of public utility regulation. The process of regulation, by restricting the upward potential for returns and responding sluggishly on the downward side, may impart some asymmetry to the distribution of returns, and is more likely to result in utilities earning less, rather than more, than their cost of capital. The traditional CAPM provides downward-biased estimates of cost of capital to the extent that these skewness effects are significant.

As far as hedging potential is concerned, investors are exposed to another kind of risk, namely, the risk of unfavorable shifts in the investment opportunity set. Merton (1973) shows that investors will hold

portfolios consisting of three funds: the risk-free asset, the market portfolio, and a portfolio whose returns are perfectly negatively correlated with the riskless asset so as to hedge against unforeseen changes in the future risk-free rate. The higher the degree of protection offered by an asset against unforeseen changes in interest rates, the lower the required return, and conversely. Merton argues that low beta assets, like utility stocks, offer little protection against changes in interest rates, and require higher returns than suggested by the standard CAPM.

Another explanation for the CAPM's inability to fully explain the process determining security returns involves the use of an inadequate or incomplete market index. Empirical studies to validate the CAPM invariably rely on some stock market index as a proxy for the true market portfolio. The exclusion of several asset categories from the definition of market index mis-specifies the CAPM and biases the results found using only stock market data. Kolbe and Read (1983) illustrate the biases in beta estimates which result from applying the CAPM to public utilities. Unfortunately, no comprehensive and easily accessible data exist for several classes of assets, such as mortgages and business investments, so that the exact relation between return and stock betas predicted by the CAPM does not exist. This suggests that the empirical relationship between returns and stock betas is best estimated empirically (ECAPM) rather than by relying on theoretical and elegant CAPM models expanded to include missing assets effects. In any event, stock betas may be highly correlated with the true beta measured with the true market index.

Yet another explanation for the CAPM's inability to fully explain the observed risk-return tradeoff involves the possibility of constraints on investor borrowing that run counter to the assumptions of the CAPM. In response to this inadequacy, several versions of the CAPM have been developed by researchers. One of these versions is the so-called zero-beta, or two-factor, CAPM which provides for a risk-free return in a market where borrowing and lending rates are divergent. If borrowing rates and lending rates differ, or there is no risk-free borrowing or lending, or there is risk-free lending but no risk-free borrowing, then the CAPM has the following form:

$$K = R_Z + \beta(R_m - R_F)$$

The model, christened the zero-beta model, is analogous to the standard CAPM, but with the return on a minimum risk portfolio which is unrelated to market returns, R_Z, replacing the risk-free rate, R_F. The model has been empirically tested by Black, Jensen, and Scholes (1972), who found a flatter than predicted CAPM, consistent with the model and other researchers' findings.

The zero-beta CAPM cannot be literally employed in cost of capital projections, since the zero-beta portfolio is a statistical construct difficult to replicate.

Empirical Evidence

A summary of the empirical evidence on the magnitude of alpha is provided in the table below.

Empirical Evidence on the Alpha Factor		
Author	Range of alpha	Period relied
Black (1993)	-3.6% to 3.6%	1931-1991
Black, Jensen and Scholes (1972)	-9.61% to 12.24%	1931-1965
Fama and McBeth (1972)	4.08% to 9.36%	1935-1968
Fama and French (1992)	10.08% to 13.56%	1941-1990
Litzenberger and Ramaswamy (1979)	5.32% to 8.17%	
Litzenberger, Ramaswamy and Sosin (1980)	1.63% to 5.04%	1926-1978
Pettengill, Sundaram and Mathur (1995)	4.6%	
Morin (1994)	2.0%	1926-1984
Harris, Marston, Mishra, and O'Brien	2.0%	1983-1998

Given the observed magnitude of alpha, the empirical evidence indicates that the risk-return relationship is flatter than that predicted by the CAPM. Typical of the empirical evidence is the findings cited in Morin (1989) over the period 1926-1984 indicating that the observed expected return on a security is related to its risk by the following equation:

$$K = .0829 + .0520\,\beta$$

Given that the risk-free rate over the estimation period was approximately 6 percent, this relationship implies that the intercept of the risk-return relationship is higher than the 6 percent risk-free rate, contrary to the CAPM's prediction. Given that the average return on an average risk stock exceeded

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the risk-free rate by about 8.0 percent in that period, that is, the market risk premium $(R_M - R_F) = 8$ percent, the intercept of the observed relationship between return and beta exceeds the risk-free rate by about 2 percent, suggesting an alpha factor of 2 percent.

Most of the empirical studies cited in the above table utilize raw betas rather than Value Line adjusted betas because the latter were not available over most of the time periods covered in these studies.

A study by Morin in May 2002 provides empirical support for the ECAPM. All the stocks covered in the Value Line Investment Survey for Windows for which betas and returns data were available were retained for analysis. There were nearly 2000 such stocks. The expected return was measured as the total shareholder return reported by Value Line over the past ten years. The Value Line betas were also retrieved from the same data base. It is noteworthy that Value Line betas are adjusted betas. The nearly 2000 companies for which all data were available were ranked in ascending order of beta, from lowest to highest. In order to palliate measurement error, the nearly 2000 securities were grouped into ten portfolios of approximately 180 securities for each portfolio. The average returns and betas for each portfolio were as follows:

Portfolio #	Beta	Return
portfolio 1	0.41	10.87
portfolio 2	0.54	12.02
portfolio 3	0.62	13.50
portfolio 4	0.69	13.30
portfolio 5	0.77	13.39
portfolio 6	0.85	13.07
portfolio 7	0.94	13.75
portfolio 8	1.06	14.53
portfolio 9	1.19	14.78
portfolio 10	1.48	20.78

It is clear from the graph below that the observed relationship between DCF returns and Value Line adjusted betas is flatter than that predicted by the plain vanilla CAPM. The observed intercept is higher than the prevailing risk-free rate of 5.7 percent while the slope is less than equal to the market risk premium of 7.7 percent predicted by the plain vanilla CAPM for that period.
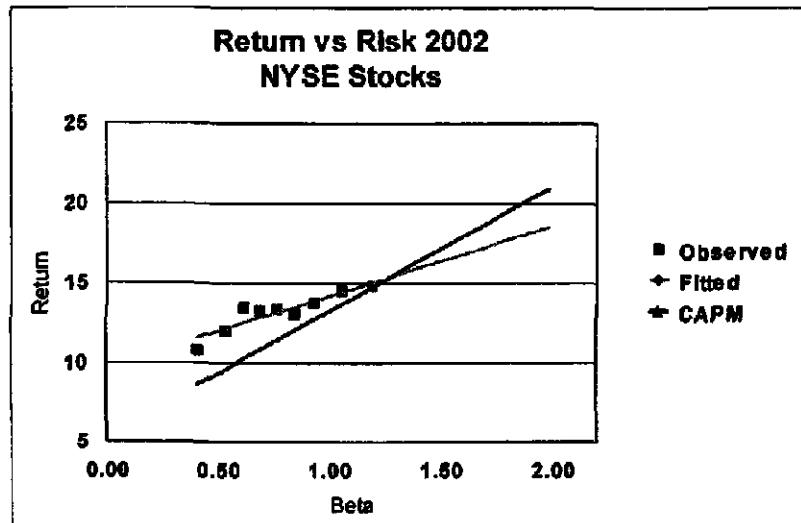
In an article published in Financial Management, Harris, Marston, Mishra, and O'Brien ("HMMO") estimate ex ante expected returns for S&P 500 companies over the period 1983-1998[2]. HMMO measure the expected rate of return (cost of equity) of each dividend-paying stock in the S&P 500 for each month from January 1983 to August 1998 by using the constant growth DCF model. They then investigate the relation between the risk premium (expected return over the 20-year U.S. Treasury Bond yield) estimates for each month to equity betas as of that same month (5-year raw betas).

The table below, drawn from HMMO Table 4, displays the average estimate prospective risk premium (Column 2) by industry and the corresponding beta estimate for that industry, both in raw form (Column 3) and adjusted form (Column 4). The latter were calculated with the traditional Value Line – Merrill Lynch – Bloomberg adjustment methodology by giving 1/3 weight of to a beta estimate of 1.00 and 2/3 weight to the raw beta estimate.

Table A-1 Risk Premium and Beta Estimates by Industry

	Raw	Adjusted

[2] Harris, R. S., Marston, F. C., Mishra, D. R., and O'Brien, T. J., "*Ex Ante* Cost of Equity Estimates of S&P 500 Firms: The Choice Between Global and Domestic CAPM," Financial Management, Autumn 2003, pp. 51-66.

	Industry (1)	DCF Risk Premium (2)	Industry Beta (3)	Industry Beta (4)
1	Aero	6.63	1.15	1.10
2	Autos	5.29	1.15	1.10
3	Banks	7.16	1.21	1.14
4	Beer	6.60	0.87	0.91
5	BldMat	6.84	1.27	1.18
6	Books	7.64	1.07	1.05
7	Boxes	8.39	1.04	1.03
8	BusSv	8.15	1.07	1.05
9	Chems	6.49	1.16	1.11
10	Chips	8.11	1.28	1.19
11	Clths	7.74	1.37	1.25
12	Cnstr	7.70	1.54	1.36
13	Comps	9.42	1.19	1.13
14	Drugs	8.29	0.99	0.99
15	ElcEq	6.89	1.08	1.05
16	Energy	6.29	0.88	0.92
17	Fin	8.38	1.76	1.51
18	Food	7.02	0.86	0.91
19	Fun	9.98	1.19	1.13
20	Gold	4.59	0.57	0.71
21	Hlth	10.40	1.29	1.19
22	Hsld	6.77	1.02	1.01
23	Insur	7.46	1.03	1.02
24	LabEq	7.31	1.10	1.07
25	Mach	7.32	1.20	1.13
26	Meals	7.98	1.06	1.04
27	MedEq	8.80	1.03	1.02
28	Pap	6.14	1.13	1.09
29	PerSv	9.12	0.95	0.97
30	Retail	9.27	1.12	1.08
31	Rubber	7.06	1.22	1.15
32	Ships	1.95	0.95	0.97
33	Stee	4.96	1.13	1.09
34	Telc	6.12	0.83	0.89
35	Toys	7.42	1.24	1.16
36	Trans	5.70	1.14	1.09
37	Txtls	6.52	0.95	0.97
38	Util	4.15	0.57	0.71
39	Whlsl	8.29	0.92	0.95
	MEAN	**7.19**		

The observed statistical relationship between expected return and adjusted beta is shown in the graph below along with the CAPM prediction:

DCF Risk Premium vs Beta
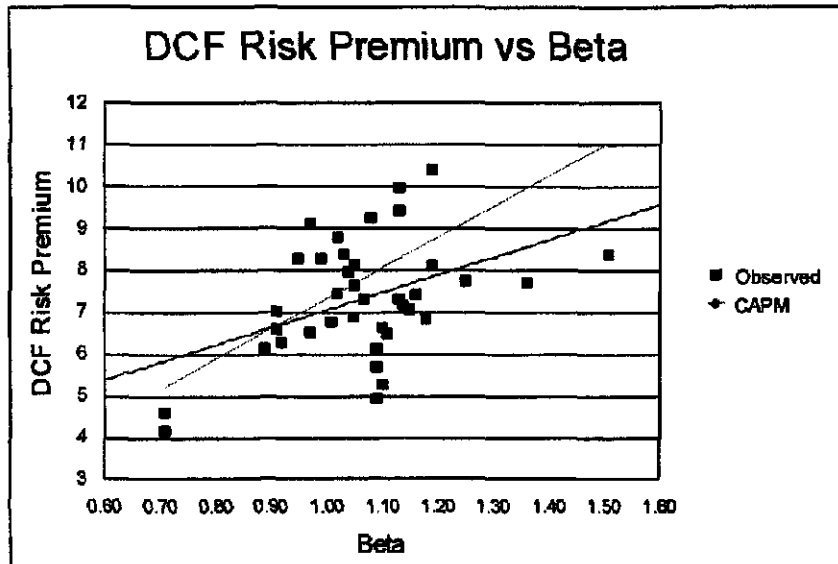
If the plain vanilla version of the CAPM is correct, then the intercept of the graph should be zero, recalling that the vertical axis represents returns in excess of the risk-free rate. Instead, the observed intercept is approximately 2 percent, that is approximately equal to 25 percent of the expected market risk premium of 7.2 percent shown at the bottom of Column 2 over the 1983-1998 period, as predicted by the ECAPM. The same is true for the slope of the graph. If the plain vanilla version of the CAPM is correct, then the slope of the relationship should equal the market risk premium of 7.2 percent. Instead, the observed slope of close to 5 percent is approximately equal to 75 percent of the expected market risk premium of 7.2 percent, as predicted by the ECAPM.

In short, the HMMO empirical findings are quite consistent with the predictions of the ECAPM.

Practical Implementation of the ECAPM

The empirical evidence reviewed above suggests that the expected return on a security is related to its risk by the following relationship:

$$K = R_F + \alpha + \beta \, (MRP - \alpha) \qquad\qquad (5)$$

or, alternatively by the following equivalent relationship:

$$K = R_F + a\,MRP + (1-a)\,\beta\,MRP \qquad (6)$$

The empirical findings support values of α from approximately 2 percent to 7 percent. If one is using the short-term U.S. Treasury Bills yield as a proxy for the risk-free rate, and given that utility stocks have lower than average betas, an alpha in the lower range of the empirical findings, 2 percent - 3 percent is reasonable, albeit conservative.

Using the long-term U.S. Treasury yield as a proxy for the risk-free rate, a lower alpha adjustment is indicated. This is because the use of the long-term U.S. Treasury yield as a proxy for the risk-free rate partially incorporates the desired effect of using the ECAPM[3]. An alpha in the range of 1 percent - 2 percent is therefore reasonable.

To illustrate, consider a utility with a beta of 0.80. The risk-free rate is 5 percent, the MRP is 7 percent, and the alpha factor is 2 percent. The cost of capital is determined as follows:

$$K = R_F + \alpha + \beta\,(MRP - \alpha)$$
$$K = 5\% + 2\% + 0.80(7\% - 2\%)$$
$$= 11\%$$

A practical alternative is to rely on the second variation of the ECAPM:

$$K = R_F + a\,MRP + (1-a)\,\beta\,MRP$$

With an alpha of 2 percent, a MRP in the 6 percent - 8 percent range, the 'a" coefficient is 0.25, and the ECAPM becomes[4]:

$$K = R_F + 0.25\,MRP + 0.75\,\beta\,MRP$$

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[3] The Security Market Line (SML) using the long-term risk-free rate has a higher intercept and a flatter slope than the SML using the short-term risk-free rate

[4] Recall that alpha equals 'a' times MRP, that is, alpha = a MRP, and therefore a = alpha/MRP. If alpha is 2 percent, then a = 0.25

Returning to the numerical example, the utility's cost of capital is:

$$K = 5\% + 0.25 \times 7\% + 0.75 \times 0.80 \times 7\%$$
$$= 11\%$$

For reasonable values of beta and the MRP, both renditions of the ECAPM produce results that are virtually identical[5].

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[5] In the Morin (1994) study, the value of "a" was actually derived by systematically varying the constant "a" in equation 6 from 0 to 1 in steps of 0.05 and choosing that value of 'a' that minimized the mean square error between the observed relationship between return and beta:

$$K = 0.0829 + .0520 \beta$$

The value of a that best explained the observed relationship was 0.25.

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APPENDIX B

FLOTATION COST ALLOWANCE

To obtain the final cost of equity financing from the investors' expected rate of return, it is necessary to make allowance for underpricing, which is the sum of market pressure, costs of flotation, and underwriting fees associated with new issues. Allowance for market pressure should be made because large blocks of new stock may cause significant pressure on market prices even in stable markets. Allowance must also be made for company costs of flotation (including such items as printing, legal and accounting expenses) and for underwriting fees.

1.   **MAGNITUDE OF FLOTATION COSTS**

According to empirical studies, underwriting costs and expenses average at least 4% of gross proceeds for utility stock offerings in the U.S. (See Logue & Jarrow: "Negotiations vs. Competitive Bidding in the Sale of Securities by Public Utilities", Financial Management, Fall 1978.)   A study of 641 common stock issues by 95 electric utilities identified a flotation cost allowance of 5.0%. (See Borum & Malley: "Total Flotation Cost for Electric Company Equity Issues", Public Utilities Fortnightly, Feb. 20, 1986.)

Empirical studies suggest an allowance of 1% for market pressure in U.S. studies. Logue and Jarrow found that the absolute magnitude of the relative price decline due to market pressure was less than 1.5%. Bowyer and Yawitz examined 278 public utility stock issues and found an average market pressure of 0.72%. (See Bowyer & Yawitz, "The Effect of New Equity Issues on Utility Stock Prices", Public Utilities Fortnightly, May 22, 1980.)

Eckbo & Masulis ("Rights vs. Underwritten Stock Offerings: An Empirical Analysis", University of British Columbia, Working Paper No. 1208, Sept., 1987) found an average flotation cost of 4.175% for utility common stock offerings. Moreover, flotation costs increased progressively for smaller size issues. They also found that the relative price decline due to market pressure in the days surrounding the announcement amounted to slightly more than 1.5%. In a classic and monumental study published in the prestigious Journal of Financial Economics by a prominent scholar, a market pressure effect of 3.14% for industrial stock issues and 0.75% for utility common stock issues was found (see Smith, C.W., "Investment Banking and the Capital Acquisition Process," Journal of Financial Economics 15, 1986). Other studies of market pressure are reported in Logue ("On the Pricing of Unseasoned Equity Offerings, Journal of Financial and Quantitative Analysis, Jan. 1973), Pettway ("The Effects of New Equity Sales Upon Utility Share Prices," Public Utilities Fortnightly, May 10 1984), and Reilly and Hatfield ("Investor Experience with New Stock Issues," Financial Analysts' Journal, Sept.- Oct. 1969). In the Pettway study, the market pressure effect for a sample of 368 public utility equity sales was in the range of 2% to 3%. Adding the direct and indirect effects of utility common stock issues, the indicated total flotation cost allowance is above 5.0%, corroborating the results of earlier studies.

As shown in the table below, a comprehensive empirical study by Lee, Lochhead, Ritter, and Zhao, "The Costs of Raising Capital," Journal of Financial Research, Vol. XIX, NO. 1, Spring 1996, shows average direct flotation costs for

equity offerings of 3.5% - 5% for stock issues between $60 and $500 million. Allowing for market pressure costs raises the flotation cost allowance to well above 5%.

FLOTATION COSTS: RAISING EXTERNAL CAPITAL
(Percent of Total Capital Raised)

Amount Raised in $ Millions	Average Flotation Cost: Common Stock	Average Flotation Cost: New Debt
$ 2 - 9. 99	13.28%	4.39%
10 - 19. 99	8.72	2.76
20 - 39. 99	6.93	2.42
40 - 59. 99	5.87	1.32
60 - 79. 99	5.18	2.34
80 - 99. 99	4.73	2.16
100 - 199. 99	4.22	2.31
200 - 499. 99	3.47	2.19
500 and Up	3.15	1.64

Note: Flotation costs for IPOs are about 17 percent of the value of common stock issued if the amount raised is less than $10 million and about 6 percent if more than $500 million is raised. Flotation costs are somewhat lower for utilities than others.

Source: Lee, Inmoo, Scott Lochhead, Jay Ritter, and Quanshui Zhao, "The Costs of Raising Capital," *The Journal of Financial Research,* Spring 1996.

Therefore, based on empirical studies, total flotation costs including market pressure amount to approximately 5% of gross proceeds. I have therefore assumed a 5% gross total flotation cost allowance in my cost of capital analyses.

2.   **APPLICATION OF THE FLOTATION COST ADJUSTMENT**

The section below shows: 1) why it is necessary to apply an allowance of 5% to the dividend yield component of equity cost by dividing that yield by 0.95 (100% - 5%) to obtain the fair return on equity capital, and 2) why the flotation adjustment is permanently required to avoid confiscation even if no further stock issues are contemplated. Flotation costs are only recovered if the rate of return is applied to total equity, including retained earnings, in all future years.

Flotation costs are just as real as costs incurred to build utility plant. Fair regulatory treatment absolutely must permit the recovery of these costs. An analogy with bond issues is useful to understand the treatment of flotation costs in the case of common stocks.

In the case of a bond issue, flotation costs are not expensed but are rather amortized over the life of the bond, and the

annual amortization charge is embedded in the cost of service. This is analogous to the process of depreciation, which allows the recovery of funds invested in utility plant. The recovery of bond flotation expense continues year after year, irrespective of whether the company issues new debt capital in the future, until recovery is complete. In the case of common stock that has no finite life, flotation costs are not amortized. Therefore, the recovery of flotation cost requires an upward adjustment to the allowed return on equity. Roger A. Morin, Regulatory Finance, Public Utilities Reports Inc., Arlington, Va., 1994, provides numerical illustrations that show that even if a utility does not contemplate any additional common stock issues, a flotation cost adjustment is still permanently required. Examples there also demonstrate that the allowance applies to retained earnings as well as to the original capital.

From the standard DCF model, the investor's required return on equity capital is expressed as:

$$K = D_1/P_0 + g$$

If P_0 is regarded as the proceeds per share actually received by the company from which dividends and earnings will be generated, that is, P_0 equals B_0, the book value per share, then the company's required return is:

$$r = D_1/B_0 + g$$

Denoting the percentage flotation costs 'f', proceeds per share B_0 are related to market price P_0 as follows:

$$P - fP = B_0$$

$$P(1 - f) = B_0$$

Substituting the latter equation into the above expression for return on equity, we obtain:

$$r = D_1/P(1-f) + g$$

that is, the utility's required return adjusted for underpricing. For flotation costs of 5%, dividing the expected dividend yield by 0.95 will produce the adjusted cost of equity capital. For a dividend yield of 6% for example, the magnitude of the adjustment is 32 basis points: .06/.95 = .0632.

In deriving DCF estimates of fair return on equity, it is therefore necessary to apply a conservative after-tax allowance of 5% to the dividend yield component of equity cost.

Even if no further stock issues are contemplated, the flotation adjustment is still permanently required to keep shareholders whole. Flotation costs are only recovered if the rate of return is applied to total equity, including retained earnings, in all future years, even if no future financing is contemplated. This is demonstrated by the numerical example contained in pages 7-9 of this Appendix. Moreover, even if the stock price, hence the DCF estimate of equity return, fully reflected the lack of permanent allowance, the company always nets less than the market price. Only the net proceeds from an equity issue are used to add to the rate base on which the investor earns. A permanent allowance for flotation costs must be

authorized in order to insure that in each year the investor earns the required return on the total amount of capital actually supplied.

The example shown on pages 7-9 shows the flotation cost adjustment process using illustrative, yet realistic, market data. The assumptions used in the computation are shown on page 7. The stock is selling in the market for $25, investors expect the firm to pay a dividend of $2.25 that will grow at a rate of 5% thereafter. The traditional DCF cost of equity is thus $k = D/P + g = 2.25/25 + .05 = 14\%$. The firm sells one share stock, incurring a flotation cost of 5%. The traditional DCF cost of equity adjusted for flotation cost is thus $ROE = D/P(1-f) + g = .09/.95 + .05 = 14.47\%$.

The initial book value (rate base) is the net proceeds from the stock issue, which are $23.75, that is, the market price less the 5% flotation costs. The example demonstrates that only if the company is allowed to earn 14.47% on rate base will investors earn their cost of equity of 14%. On page 8, Column 1 shows the initial common stock account, Column 2 the cumulative retained earnings balance, starting at zero, and steadily increasing from the retention of earnings. Total equity in Column 3 is the sum of common stock capital and retained earnings. The stock price in Column 4 is obtained from the seminal DCF formula: $D_1/(k - g)$. Earnings per share in Column 6 are simply the allowed return of 14.47% times the total common equity base. Dividends start at $2.25 and grow at 5% thereafter, which they must do if investors are to earn a 14% return. The dividend payout ratio remains constant, as per the assumption of the DCF model. All quantities, stock price, book value, earnings, and dividends grow at a 5% rate, as shown at the bottom of the relevant columns. Only if the company is allowed to earn 14.47% on equity do investors earn 14%. For example, if the company is allowed only 14%, the stock price drops from $26.25 to $26.13 in the second year, inflicting a loss on shareholders. This is shown on page 9. The growth rate drops from 5% to 4.53%. Thus, investors only earn 9% + 4.53% = 13.53% on their investment. It is noteworthy that the adjustment is always required each and every year, whether or not new stock issues are sold in the future, and that the allowed return on equity must be earned on total equity, including retained earnings, for investors to earn the cost of equity.

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ASSUMPTIONS:

ISSUE PRICE =	$25.00
FLOTATION COST =	5.00%
DIVIDEND YIELD =	9.00%
GROWTH =	5.00%
EQUITY RETURN =	**14.00%**
$(D/P + g)$	
ALLOWED RETURN ON EQUITY =	**14.47%**
$(D/P(1-f) + g)$	