

# Large Filing Separator Sheet

Case Number: 11-351-EL-AIR  
11-352-EL-AIR  
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11-356-EL-AAM  
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Prefiled Direct Testimonies of  
Daniel E. High, Thomas R. Zelina  
and William E. Avera

COMPANY EX. NO. \_\_\_\_\_

**BEFORE  
THE PUBLIC UTILITIES COMMISSION OF OHIO**

|                                                 |                        |
|-------------------------------------------------|------------------------|
| In the Matter of the Application of )           |                        |
| Columbus Southern Power Company and )           |                        |
| Ohio Power Company, Individually and, if )      | Case No. 11-351-EL-AIR |
| Their Proposed Merger is Approved, as a )       | Case No. 11-352-EL-AIR |
| Merged Company (collectively, AEP Ohio) )       |                        |
| for an Increase in Electric Distribution Rates) |                        |
|                                                 |                        |
| In the Matter of the Application of )           |                        |
| Columbus Southern Power Company and )           |                        |
| Ohio Power Company, Individually and, if )      | Case No. 11-353-EL-ATA |
| Their Proposed Merger is Approved, as a )       | Case No. 11-354-EL-ATA |
| Merged Company (collectively, AEP Ohio) )       |                        |
| for Tariff Approval )                           |                        |
|                                                 |                        |
| In the Matter of the Application of )           |                        |
| Columbus Southern Power Company and )           |                        |
| Ohio Power Company, Individually and, if )      | Case No. 11-356-EL-AAM |
| Their Proposed Merger is Approved, as a )       | Case No. 11-358-EL-AAM |
| Merged Company (collectively, AEP Ohio) )       |                        |
| for Approval to Change Accounting )             |                        |
| Methods )                                       |                        |

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**PREFILED DIRECT TESTIMONY OF  
DANIEL E. HIGH  
ON BEHALF OF  
COLUMBUS SOUTHERN POWER COMPANY  
AND  
OHIO POWER COMPANY**

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Management Policies, Practices & Organizations

Operating Income

Rate Base

Allocations

Rate of Return

X Rates and Tariffs

Other

Filed March 14<sup>th</sup>, 2011

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DANIEL E. HIGH

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**BEFORE  
THE PUBLIC UTILITIES COMMISSION OF OHIO  
DIRECT TESTIMONY OF  
DANIEL E. HIGH  
ON BEHALF OF  
COLUMBUS SOUTHERN POWER COMPANY AND  
OHIO POWER COMPANY**

**I. PERSONAL DATA**

1  
2   **Q.   PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND POSITION.**

3   A.   My name is Daniel High. My business address is 1 Riverside Plaza, Columbus,  
4       Ohio 43215. I currently hold the position of Regulatory Consultant I in the  
5       Regulated Pricing and Analysis department for the American Electric Power  
6       Service Corporation, a subsidiary of American Electric Power Company, Inc.  
7       (AEP).

**II. BACKGROUND**

8  
9   **Q.   PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND**  
10   **AND BUSINESS EXPERIENCE.**

11 A.   In December 1989, I received a Bachelors of Science Degree in Energy  
12       Management from West Liberty University. In May 1997, I received a Masters of  
13       Business Administration degree from Ashland University.  
14       In February 1990, I joined Columbus Southern Power Company as a Marketing  
15       and Customer Services Representative in the Marketing and Customer Services  
16       Department of the Columbus Region. In August 1998, I joined the Regulated  
17       Pricing & Analysis Department as a Regulatory Consultant. From 2006 through  
18       2008, I performed duties as a Regulatory Consultant in Transmission &

1 Interconnection Services under the Regulatory Services Department, where I was  
2 responsible for rate design and maintaining wholesale contracts. In January 2009,  
3 I returned to Regulated Pricing & Analysis under the Regulatory Services  
4 Department as a Regulatory Consultant. My responsibilities include preparation  
5 of cost-of-service studies, rate design and tariff provisions for the AEP operating  
6 companies, and special contracts and pricing for retail and wholesale customers.

7 **Q. HAVE YOU TAKEN ANY COURSES IN COST ALLOCATION AND**  
8 **RATE DESIGN?**

9 A. Yes. In 1999, I attended the Edison Electric Institute's (EEI) school on cost  
10 allocation and rate design. In 2003, I also attended EEI's advanced cost  
11 allocation and rate design school.

12 **Q. FOR WHOM ARE YOU TESTIFYING IN THIS PROCEEDING?**

13 A. I am testifying on behalf of AEP Ohio, which is an operating unit of AEP and is  
14 comprised of Columbus Southern Power (CSP) and Ohio Power (OPCo). I will  
15 refer to AEP Ohio throughout my testimony as CSP, OPCo or collectively as AEP  
16 Ohio or the Company.

17 **Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY BEFORE ANY**  
18 **REGULATORY COMMISSIONS?**

19 A. Yes. I have submitted testimony on behalf of Kentucky Power Company before  
20 the Public Service Commission of Kentucky. I have also submitted testimony on  
21 behalf of Indiana Michigan Power Company before the Michigan Public Service  
22 Commission.

**III. CLASS COST-OF-SERVICE STUDY**

1  
2 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

3 A. The purpose of my testimony is to support and describe the development of the  
4 Company's class cost-of-service studies, which allocate the total Ohio retail  
5 jurisdiction rate base, revenues and expenses to each rate schedule. A class cost-  
6 of-service study was prepared for both CSP and OPCo.

7 **Q. ARE YOU SPONSORING ANY SCHEDULES RELATED TO THE CLASS**  
8 **COST-OF-SERVICE STUDIES?**

9 A. Yes, I am sponsoring the following schedules:

- 10       • Schedule E-3.1 (CSP)  
11       • Schedule E-3.1 (OPCo)  
12       • Schedule E-3.2 (CSP)  
13       • Schedule E-3.2 (OPCo)

14 **Q. PLEASE DESCRIBE THESE SCHEDULES.**

15 A. Schedule E-3.1 (for both CSP and OPCo) is the customer component only of the  
16 class cost-of-service study for test year ended May 31, 2011 (three-month actual  
17 and nine-month forecast). Schedule E-3.2 (for both CSP and OPCo) is the class  
18 cost-of-service study for test year ended May 31, 2011 (three-month actual and  
19 nine-month forecast).

20 **Q. PLEASE BRIEFLY DESCRIBE THE NATURE AND PURPOSE OF A**  
21 **CLASS COST-OF-SERVICE ALLOCATION STUDY.**

22 A. Class cost-of-service studies are prepared to determine the revenue requirement  
23 for the services offered by the utility and to determine the costs that different

1 classes of customers impose on the utility system. A class cost-of-service  
2 allocation study is a basic analytical tool used in utility rate design. When all of  
3 the jurisdictional costs are allocated to the various customer classes, the result is a  
4 class cost responsibility study that is a guide in establishing rates based on costs.

5 **Q. PLEASE DESCRIBE HOW YOU PREPARED THE CLASS COST-OF-**  
6 **SERVICE STUDIES.**

7 An Excel spreadsheet was used to prepare the class cost-of-service studies. The  
8 Excel spreadsheet permits the analyst to use two types of allocation factors –  
9 those which are generated externally and input to the spreadsheet and those which  
10 are developed internally as a result of the allocation process built into the  
11 spreadsheet. An example of an external allocation factor would be the total  
12 number of secondary customers served at distribution level (DIST\_SERV). An  
13 example of an internal factor would be the net plant allocation factor (NP).

14 **Q. WHAT IS THE SOURCE OF THE DATA USED TO PREPARE THE**  
15 **COST-OF-SERVICE STUDY?**

16 A. Separate jurisdictional allocations of distribution rate base, revenue and expenses  
17 were prepared for both CSP and OPCo, and are supported by Company witness  
18 Caudill. The CSP and OPCo retail jurisdictional rate base and expense  
19 components are assigned to the different customer classes using the standard  
20 three-step process to assign costs: functionalization, classification, and finally,  
21 allocation. This jurisdictional information has already been functionalized and  
22 identified as related to the distribution function.

1    **Q.    PLEASE DESCRIBE THE CLASSIFICATION STEP OF THE PROCESS.**

2    A.    The next step is to separate the functionalized costs into the classifications of  
3    demand costs (costs that are based on the demand or kW/kVa imposed by the  
4    customer), or customer costs (costs that are directly related to the number of  
5    customers served).

6            The cost classifications used in the Company's cost-of-service studies  
7    include the following:

8

| Function         | Classification   |
|------------------|------------------|
| Distribution     | Demand, Customer |
| Customer Service | Customer         |

9            Generally, the distribution system costs are affected by either the peak  
10   demand imposed on the distribution facilities or by the number of customers  
11   served. Demand-related distribution costs reflect the size of the class of  
12   customer's electrical load served, while customer related distribution costs are  
13   primarily related to the number of customers. The classification process provides  
14   a basis on which to allocate different categories of costs (demand or customer) to  
15   the Company's classes.

16   **Q.    PLEASE DESCRIBE THE ALLOCATION STEP OF THE PROCESS.**

17   A.    The final step is to allocate the costs among the classes of customers based on  
18   how the costs are incurred for each class. Customer classes are determined and  
19   grouped according to the nature of service provided, voltage level and the load



1 usage characteristics. In general, the five principle customer classes are  
2 residential, commercial, industrial, outdoor lighting and street lighting. The need  
3 to subdivide these classes depends on the individual utility's customer base.

4 The allocation process involves dividing the functionalized and classified  
5 costs among the customer classes. The objective in this process is to determine a  
6 reasonable, appropriate and understandable method to assign the costs. Some  
7 costs are directly assignable to a single class, or even a single customer. For  
8 instance, the equipment used wholly for public street and highway lighting are  
9 directly assigned to the street lighting class. Most costs, however, are attributable  
10 to more than one customer class. These are joint costs and must be allocated to  
11 customer classes by an allocation methodology that is based on the manner in  
12 which the costs are caused by those different classes. The joint costs are incurred  
13 based on the capacity demanded or the number of customers. In many instances,  
14 the classification process will lead to an allocation methodology. For example,  
15 costs associated with reading customer meters will vary with the number of  
16 customers as well as the complexity of reading the meter, so meter reading costs  
17 are allocated to the classes based on a weighted customer allocation factor. A  
18 weighted customer allocation factor is developed by multiplying the number of  
19 customers in each class by a factor representing the difference in cost associated  
20 with providing that service to different types of customers.

21 When this process is completed and all of the costs are allocated to the  
22 customer classes, the result is a fully allocated cost-of-service study that  
23 establishes cost responsibility and the test year rate of return earned from each

1 class, making it possible to determine the rates each class of customer should pay  
2 based on costs that are just and reasonable.

3 **Q. WHAT CRITERIA MUST BE ESTABLISHED TO ENSURE THAT THE**  
4 **ALLOCATION OF COSTS TO THE CUSTOMERS IS APPROPRIATE?**

5 A. Generally, the following criteria should be used to determine the appropriateness  
6 of an allocation methodology:

- 7 1) The method should reflect the planning and operating  
8 characteristics of the utility's system.
- 9 2) The method should recognize customer class characteristics such  
10 as peak demand on the system, diversity characteristics, number of  
11 customers, etc.
- 12 3) The method should produce stable results on a year-to-year basis.
- 13 4) Customers who benefit from the use of the system should also bear  
14 appropriate cost responsibility for the system.

15 **Q. DOES THE ALLOCATION METHOD EMPLOYED BY THE COMPANY**  
16 **MEET THESE OBJECTIVES?**

17 A. Yes, it does. The allocation methodology utilized in the Company's cost-of-  
18 service studies was chosen based on the criteria listed above.

19 **IV. ALLOCATION BASIS**

20 **Q. PLEASE DESCRIBE THE ALLOCATION OF ELECTRIC PLANT IN**  
21 **SERVICE.**

22 A. Electric Plant in Service is identified as distribution, intangible and general plant.

1    **Q.    HOW WERE THE DISTRIBUTION PLANT ACCOUNTS ALLOCATED?**

2    A.    The Company, for class allocation purposes, used the summer and winter peak  
3           method to assign customer costs to reflect two seasonal peaks (six Coincident  
4           Peaks (CP)). The six CP distribution demand allocation factor assigns costs based  
5           on the class contribution to the average of CSP and OPCo's six monthly CPs on  
6           the primary distribution facilities (DIST\_CPD). The six months that were used to  
7           derive the primary distribution demand allocation factors were the three summer  
8           months of June, July, August and the three winter months of December, January  
9           and February for the test period ended May 31, 2011.

10                 Distribution plant is classified as demand and customer related, and  
11                 allocated to the customer classes using factors based on demand levels or number  
12                 of customers. Distribution plant Accounts 360 through 368 were classified solely  
13                 as demand-related for class allocation purposes. Accounts 360, 361 and 362 were  
14                 allocated to the distribution customer classes based on their contributions to the  
15                 average of the Company's six monthly peak demands on the primary distribution  
16                 system (DIST\_CPD) as mentioned previously.

17                 Accounts 364 through 367 were split into primary and secondary voltage  
18                 functions based upon information contained in the Company's distribution  
19                 engineering records. The primary portions of Accounts 364 through 367 were  
20                 allocated using the DIST\_CPD and the secondary component of Accounts 364  
21                 through 367 were allocated based on a combination of each class' 12-month  
22                 maximum demand and the summation of individual customers' annual maximum  
23                 demands in each class served from those facilities reflecting the fact that some

1 secondary facilities serve only one customer, while others serve two or more  
2 customers (DIST\_POLES, DIST\_OHLINES and DIST\_UGLINES).

3 Account 368, Transformers, was split into primary and secondary voltage  
4 functions based upon information contained in the Company's distribution  
5 engineering records to determine the functional use of the equipment. The  
6 primary portion of Account 368 was allocated using DIST\_CPD and the  
7 secondary portion was allocated using the appropriate secondary voltage demand  
8 allocation factor based on a combination of each class' 12-month maximum  
9 demand and the summation of individual customers' annual maximum demands  
10 (DIST\_TRANSF).

11 Account 369, Services, was classified as customer-related and was  
12 allocated using the average number of secondary customers served  
13 (DIST\_SERV).

14 Account 370, Meters, was allocated using the average number of  
15 customers weighted by a factor which considers the cost differential of various  
16 metering installations (DIST\_METERS). Account 371, Install on Customer  
17 Premises, and Account 372, Leased Property on Customer Premises, were directly  
18 assigned to the outdoor lighting class (DIST\_OL). Account 373, Street Lighting,  
19 was directly assigned to the street lighting class (DIST\_SL). General and  
20 intangible plant investment reflects a composite demand and customer  
21 classification. General and intangible plant investment is allocated on the basis of  
22 payroll labor (LABOR\_M).

1   **Q.   PLEASE DESCRIBE THE ALLOCATION OF ACCUMULATED**  
2   **PROVISION FOR DEPRECIATION AND AMORTIZATION.**

3   A.   The components of Accumulated Provision for Depreciation and Amortization  
4       were classified and allocated in a fashion similar to Electric Plant in Service.

5   **Q.   PLEASE DESCRIBE THE ALLOCATION OF WORKING CAPITAL.**

6   A.   The components of distribution working capital allowance include materials &  
7       supplies and other prepayments (insurance, etc.). Materials & supplies were  
8       allocated based on distribution electric plant in service; and prepayments were  
9       allocated using factors developed from gross plant relationships.

10  **Q.   PLEASE DESCRIBE THE ALLOCATION OF RATE BASE OFFSETS.**

11  A.   Customer Deposits were assigned based on an analysis of accounting records;  
12       prepayment pension expenses were allocated based on O&M labor; and Customer  
13       Advances, Deferred Taxes and Deferred Investment Tax Credits were allocated  
14       based on distribution electric plant in service.

15  **Q.   HOW WERE REVENUES DEVELOPED FOR EACH CLASS?**

16  A.   Test year retail sales revenues were directly assigned to each class. Forfeited  
17       discounts and miscellaneous service revenues were directly assigned based on an  
18       analysis of accounting records. The functional components of rent from electric  
19       property and other electric revenue were allocated to classes based on distribution  
20       electric plant in service.

1   **Q.   PLEASE DESCRIBE THE ALLOCATION OF DISTRIBUTION O&M**  
2   **AMONG THE VARIOUS CUSTOMER CLASSES.**

3   A.   Distribution O&M expenses were functionalized and classified according to the  
4   associated distribution plant accounts and allocated accordingly. Accounts 581,  
5   Load Dispatching operation expense and 582, Station Equipment operation  
6   expense, were allocated using the primary distribution demand allocation factor  
7   (DIST\_CPD). Account 583, Overhead Lines operation expense, was allocated  
8   based upon the same allocation used for plant Account 365, Overhead Lines.  
9   Account 584, Underground Lines operation expense, was allocated based upon  
10   the same allocation used for plant Accounts 366, Underground Conduit, and 367  
11   Underground Lines. Account 585, Street Lighting operation expense, was  
12   classified as customer-related and directly assigned to the street lighting class.  
13   Account 586, Meters operation expense, was classified customer-related and  
14   allocated in the same manner as meter plant. Account 587, Customer Installations  
15   operation expense, was classified as customer-related and allocated based on  
16   primary customers (DIST\_PCUST).

17         Accounts 588, Miscellaneous Distribution expense, and 589, Rent  
18   expense, were allocated on total distribution plant and classified accordingly.  
19   Account 580, Supervision & Engineering operation expense, was classified as  
20   demand- and customer-related and allocated using the allocated subtotal of  
21   Accounts 581 through 589.

22         Accounts 591, Structures maintenance expense, and 592, Station  
23   Equipment maintenance expense, were classified as demand-related and allocated

1 on the primary distribution demand allocation factor (DIST\_CPD). Accounts  
2 593, 594, and 595, Maintenance of Overhead Lines, Underground Lines, and  
3 Transformers, respectively, were functionalized and classified according to the  
4 associated distribution plant accounts and allocated accordingly. Account 596,  
5 Street Lighting maintenance expense, was classified as customer-related and  
6 directly assigned to the street lighting class. Account 597, Meters maintenance  
7 expense, was classified as customer-related and allocated in the same manner as  
8 meter plant. Account 598, Miscellaneous Distribution maintenance expense, was  
9 classified as customer-related and directly assigned to the outdoor lighting class.  
10 Account 590, Supervision & Engineering maintenance expense, was classified  
11 and allocated based on the sum of the allocated O&M expense Accounts 591  
12 through 598.

13 **Q. CAN YOU EXPLAIN HOW CUSTOMER ACCOUNTS (ACCOUNTS 901-**  
14 **905), CUSTOMER SERVICES AND INFORMATION AND SALES**  
15 **EXPENSE (ACCOUNTS 907-916) WERE ALLOCATED?**

16 **A.** Account 902, Meter Reading expense, was allocated to those classes with meter  
17 installations based upon an average number of customers weighted to reflect  
18 differences in meter reading requirements. Account 903, Customer Records  
19 expense, was divided into two categories, costs related to the customer call center  
20 and other records and collections expenses. Call center costs were first split into  
21 residential and all other customers based on the actual number of calls received.  
22 The residential tariff class was directly assigned call center costs based on the  
23 actual number of calls received by the call center. The remaining call center costs

1        were allocated among the other tariffs (excluding outdoor lighting) based on the  
2        number of customers in those classes. The other records and collections expenses  
3        were allocated to all classes based on the number of customers. Account 904,  
4        Uncollectible Accounts, which is primarily associated with losses related to  
5        uncollected rent revenues, was allocated based on an allocated total of rents from  
6        non-associated companies and rent from electric property.

7                Accounts 901 and 905 were allocated based on the sum of the allocated  
8        accounts 902, 903 and 904. Factoring Expense, recorded in Account 426, and  
9        Interest on Customer Deposits, recorded in Account 431, were also shown as  
10       Customer Accounts Expense as those costs are directly related to customer  
11       account activities. The cost associated with Factoring Expense was allocated  
12       using current sales revenue. The cost associated with Interest on Customer  
13       Deposits was allocated based on customer deposits held by customer class. All  
14       customer accounting expenses were classified as customer-related.

15               Costs associated with Customer Service and Information and Sales  
16       Expense, Accounts 907-916, were allocated using the allocated total of Customer  
17       Accounts (901-905), because of the general nature of these costs which include  
18       supervision, labor and materials, support efforts to provide services to all  
19       customer classes. All customer accounting, customer services and sales expense  
20       accounts were classified as customer-related.



1 Q. PLEASE DESCRIBE THE ALLOCATION OF ADMINISTRATIVE &  
2 GENERAL (A&G) EXPENSE.

3 A. Regulatory expense was allocated based on class revenue levels. Property  
4 insurance and associated business development expense were allocated based on  
5 the distribution plant allocation factor. All other A&G expenses were  
6 functionalized, classified and allocated based on the allocated labor (Labor\_M)  
7 allocation factor.

8 Q. PLEASE DESCRIBE THE ALLOCATION OF DEPRECIATION AND  
9 AMORTIZATION EXPENSE.

10 A. The functionalized components of depreciation and amortization expense were  
11 allocated using the corresponding plant items.

12 Q. HOW WERE TAXES OTHER THAN INCOME TAXES ALLOCATED TO  
13 EACH CLASS?

14 A. Taxes other than income taxes were allocated according to the basis for each tax.  
15 Payroll taxes are labor related and therefore allocated using the allocated labor  
16 (LABOR\_M) allocation factor. Taxes associated with property and miscellaneous  
17 taxes such as sales and use were allocated based on the internally derived  
18 allocated class net plant ratios.

19 Regulatory fees, franchise and commercial activity taxes were allocated  
20 using the sales revenue allocation factor.

1   **Q.   HOW WERE INCOME TAXES ASSIGNED TO THE RETAIL CLASSES?**

2   A.   State and Current Federal Income Taxes were computed class by class using the  
3       applicable tax rates. Individual Schedule M items, Deferred Federal Income  
4       Taxes, and Deferred Investment Tax Credits were allocated based on  
5       corresponding allocated costs to which the items relate. Deductible interest  
6       expense was calculated using a formula to synchronize with allocated rate base.

7   **Q.   PLEASE DESCRIBE SCHEDULE 3.1 (FOR BOTH CSP AND OPCO).**

8   A.   Schedule E-3.1 (CSP) and Schedule E-3.1 (OPCo) include the customer  
9       component only of the class cost-of-service studies. Schedule E-3.1 was  
10      developed to meet the Ohio Administrative Code filing requirements under  
11      Appendix A.

12   **Q.   PLEASE SUMMARIZE THE CURRENT OVERALL AND CLASS**  
13      **EARNED RATE OF RETURN ON RATE BASE FOR EACH CLASS**  
14      **SHOWN IN BOTH THE CSP AND OPCO CLASS COST-OF-SERVICE**  
15      **STUDIES (SCHEDULE E-3.2) THAT YOU PREPARED.**

16   A.   For test year ending May 31, 2011 (three-month actual and nine-month forecast),  
17      the resulting earned distribution rates of return, prior to any increase in rates, are  
18      shown on the following page:

1

| CLASS                                       | CSP   | OPCo    |
|---------------------------------------------|-------|---------|
| Total Retail                                | 5.98% | 4.72%   |
| Residential (RR/RS)                         | 6.83% | 4.15%   |
| General Service – Small (GS-1)              | 4.01% | 5.18%   |
| General Service – Low Load Factor (GS-2)    | 6.67% | 3.06%   |
| General Service – Medium Load Factor (GS-3) | 2.47% | 5.15%   |
| General Service – Large (GS-4)              | N.M.* | N.M.*   |
| Electric Heating Schools (EHS)              | -     | -10.36% |
| Electric Heating General (EHG)              | -     | 3.29%   |
| School Service (SS)                         | -     | 1.80%   |
| Outdoor Lighting (AL/OL)                    | 4.08% | -1.05%  |
| Street Lighting (SL)                        | 7.31% | 4.73%   |

2 \* Result is not meaningful due to minimal rate base for class.

3 **Q. HOW ARE THE CLASS COST-OF-SERVICE ALLOCATION STUDIES**  
 4 **USED IN THIS PROCEEDING?**

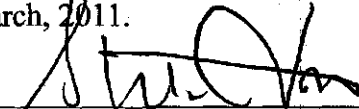
5 A. Company witness Zelina discusses how he uses the results of the class cost-of-  
 6 service allocation studies to determine the requested rate increase by customer  
 7 class and subsequently to design the proposed rates.

8 **Q. DOES THIS CONCLUDE YOUR PREFILED DIRECT TESTIMONY?**

9 A. Yes.

### CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of the Pre-Filed Direct Testimony of Daniel E. High has been served upon the below-named counsel via First Class mail, postage prepaid, this 14<sup>th</sup> day of March, 2011.

  
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COMPANY EX. NO. \_\_\_\_\_

**BEFORE  
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of )  
Columbus Southern Power Company and )  
Ohio Power Company, Individually and, if ) Case No. 11-351-EL-AIR  
Their Proposed Merger is Approved, as a ) Case No. 11-352-EL-AIR  
Merged Company (collectively, AEP Ohio) )  
for an Increase in Electric Distribution Rates )

In the Matter of the Application of )  
Columbus Southern Power Company and )  
Ohio Power Company, Individually and, if ) Case No. 11-353-EL-ATA  
Their Proposed Merger is Approved, as a ) Case No. 11-354-EL-ATA  
Merged Company (collectively AEP Ohio) )  
for Tariff Approval )

In the Matter of the Application of )  
Columbus Southern Power Company and )  
Ohio Power Company, Individually and, if ) Case No. 11-356-EL-AAM  
Their Proposed Merger is Approved, as a ) Case No. 11-358-EL-AAM  
Merged Company (collectively AEP Ohio) )  
for Approval to Change Accounting )  
Methods )

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**PREFILED DIRECT TESTIMONY OF  
THOMAS R. ZELINA  
ON BEHALF OF  
COLUMBUS SOUTHERN POWER COMPANY  
AND  
OHIO POWER COMPANY**

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Management Policies, Practices & Organizations

Operating Income

Rate Base

Allocations

Rate of Return

X Rates and Tariffs

Other

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THOMAS R. ZELINA

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**BEFORE  
THE PUBLIC UTILITIES COMMISSION OF OHIO  
DIRECT TESTIMONY OF  
THOMAS R. ZELINA  
ON BEHALF OF  
COLUMBUS SOUTHERN POWER COMPANY  
AND OHIO POWER COMPANY**

**I. PERSONAL DATA**

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

A. My name is Thomas R. Zelina. My business address is 1 Riverside Plaza, Columbus, Ohio 43215.

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

A. I am employed by American Electric Power Service Corporation (AEPSC), a subsidiary of American Electric Power Company, Inc. (AEP), as Manager-Regulated Pricing and Analysis. AEP Ohio is an operating unit of AEP and is comprised of Columbus Southern Power (CSP) and Ohio Power Company (OPCo), hereby collectively referred to as AEP Ohio or the Company.

**Q. PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.**

A. I graduated from West Virginia University with a Bachelor of Science degree in Civil Engineering in 1984 and a Master of Science degree in Civil Engineering in 1986. I am also a licensed Professional Engineer in the state of Ohio. In 1993, I earned a Master of Business Administration degree from The Ohio State University. In 2010, I completed the New Mexico State Rate Fundamentals Course. In 1989, I joined AEPSC as an engineer in the Civil Engineering Department. Since that time, I have progressed through



1 various engineering and management positions and moved into my current position of  
2 Manager-Regulated Pricing and Analysis in September 2010.

3 **Q. WHAT ARE YOUR RESPONSIBILITIES AS MANAGER-REGULATED**  
4 **PRICING AND ANALYSIS?**

5 A. My responsibilities include the oversight of the preparation of cost of service and rate  
6 design analysis for the AEP operating companies in Ohio, Michigan, Indiana and  
7 Kentucky.

8 **II. PURPOSE OF TESTIMONY**

9 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

10 A. The purpose of my testimony is to sponsor or co-sponsor certain Schedules and certain  
11 rate elements shown on the Company's Tariff Schedules proposed in this filing.

12 **III. COMMENTS ON SCHEDULES**

13 **Q. WHAT SCHEDULES ARE YOU SPONSORING OR CO-SPONSORING?**

14 A. I am sponsoring or co-sponsoring the following Schedules:

- 15 • C-2.1, Operating Revenue
- 16 • C-3.1 thru C-3.6, C-3.21 (CSP only) and C-3.22 (CSP only), Rider Revenue
- 17 • E-4, Class and Schedule Revenue Summary
- 18 • E-4.1, Test Year Revenue, Proposed vs. Current Rates
- 19 • E-5, Typical Bill Comparison

20 **Q. WHAT PORTION OF SCHEDULE C-2.1 ARE YOU SPONSORING?**

21 A. I am sponsoring the unadjusted base revenue as calculated in Column K, Page 2 of 2, on  
22 Schedule E-4 and shown on Schedule C-2.1 (Page 1, Line 2, Column F). This revenue is

1 based upon test year billing determinants (three months actual and nine months  
2 forecasted for the period ending May 31, 2011) and current rates.

3 **Q. WHAT PORTION OF SCHEDULES C-3.1 THRU C-3.6, C-3.21 AND C-3.22 ARE**  
4 **YOU CO-SPONSORING?**

5 A. I am co-sponsoring the rider revenue adjustments shown on Schedules C-3.1 thru C-3.6,  
6 C-3.21 (CSP only) and C-3.22 (CSP only). The rider revenue for each tariff is calculated  
7 on Schedule E-4.1 by multiplying the billing determinants by the current approved rider  
8 rates. Company witness Moore sponsors the calculation of the proposed rider rates.  
9 Consistent with the removal of rider-related rate base and expense amounts supported by  
10 Company witness Mitchell, rider-related revenues have been removed from the cost of  
11 service because these revenues and associated expenses are collected and recovered  
12 separately through the various Commission-approved riders.

13 **Q. PLEASE EXPLAIN SCHEDULE E-4.**

14 A. Schedule E-4 is the revenue summary schedule showing distribution revenues at current  
15 rates and at the proposed rate level. This schedule is a summary of the sales, current  
16 revenue, proposed revenue by rate schedule as computed in Schedule E-4.1 and the  
17 percent of revenue each rate schedule contributes to total distribution service revenue. In  
18 addition, Schedule E-4 displays the amount and percent increase proposed by rate  
19 schedule.

20 **Q. PLEASE EXPLAIN SCHEDULE E-4.1.**

21 A. Schedule E-4.1 provides the detail of the revenue calculations by rate schedule as  
22 summarized in Schedule E-4. This Schedule also presents the billing determinants  
23 associated with the respective rate schedules. The sales revenues for the 12 months

1 ended May 31, 2011 are based upon historical data for the three months ended August 31,  
2 2010 and kWh sales and customer forecasts by revenue class for the nine months ended  
3 May 31, 2011. The forecast was applied to historical billing units to develop projected  
4 billing units by rate schedule for the 9-month forecast period. The projected billing units  
5 were added to the actual billing units for the 3-month historical period to determine the  
6 total billing units by rate schedule for the test year. These billing units were then  
7 multiplied by current rates and the proposed rates to determine the current and projected  
8 base distribution revenues by rate schedule.

9 **Q. PLEASE EXPLAIN SCHEDULE E-5.**

10 A. Schedule E-5 is a typical bill comparison that presents the effect of the proposed rates on  
11 customer bills. Schedule E-5 shows the amount and percentage difference for a total bill  
12 at various consumption levels for the various rate schedules.

13 **IV. RATE DESIGN**

14 **Q. PLEASE EXPLAIN THE GENERAL APPROACH TO RATE DESIGN.**

15 A. In general, the Company's approach is to design rates and rate components which reflect  
16 the underlying costs to the Company. The primary objective is to design rates to reflect  
17 as nearly as possible the costs of providing each customer class with electric distribution  
18 service. In keeping with this objective, the Company proposes to apply the rate increase,  
19 excluding the proposed riders, to produce the same proposed rate of return for each  
20 customer class based on CSP's and OPCo's class cost-of-service study as sponsored by  
21 Company witness High in Schedule E-3.2.

22 In addition, as discussed by Company witness Hamrock, the proposed rates were  
23 designed to include a greater portion of the fixed distribution costs in fixed monthly

1 charges and/or demand charges to better align rates with costs. This also reduces the  
2 impact of distribution revenue fluctuations based on energy usage by customers.

3 In this proceeding, we are focused on distribution-related costs. Distribution-  
4 related costs are classified as either customer-related or primary/secondary demand-  
5 related. Customer-related costs are proposed to be collected through customer charges,  
6 with the rates designed to collect all customer-related costs through the customer charge.  
7 In addition, whenever possible, distribution demand costs are proposed to be collected  
8 through demand charges. For customers without demand meters, the distribution demand  
9 costs are proposed to be collected through energy charges per kWh.

10 **Q. PLEASE EXPLAIN WHY THE PROPOSED CSP RATES ARE IDENTICAL TO**  
11 **THE OPCO RATES ON AN INDIVIDUAL TARIFF BASIS.**

12 A. We anticipate that the merger of CSP and OPCo will be completed by the time the new  
13 distribution rates are implemented. In anticipation of a new merged Ohio Power  
14 Company, a single set of distribution rates was designed to be applicable to both  
15 traditional CSP and OPCo rate areas. For rate design purposes, this was accomplished by  
16 combining CSP's and OPCo's proposed class revenue and billing determinants. The  
17 combined rates are shown in both the proposed CSP and OPCo Tariff Sheets. Separate  
18 rates for CSP and OPCo were also computed on an individual company basis.

19 **Q. PLEASE EXPLAIN THE CHANGES TO THE COMPANY'S RESIDENTIAL**  
20 **SERVICE RATE DESIGN.**

21 A. The costs of providing distribution service do not vary with volumetric usage and would  
22 ideally be collected through a monthly fixed charge or through demand charges. Since  
23 most residential customers do not have meters capable of measuring demands, residential

1 distribution demand costs are generally collected through per kWh energy charges. To  
2 collect the distribution demand costs, the Company is proposing a single per kWh energy  
3 charge applicable to all residential energy usage. One exception to this is the optional  
4 demand-metered residential service schedules, which include a monthly demand charge  
5 and no per kWh distribution energy charge. Customer-related costs for all residential  
6 customers are collected through a monthly customer charge established at the full  
7 customer cost.

8 **Q. PLEASE EXPLAIN WHY A SINGLE ENERGY USAGE BLOCK WAS USED IN**  
9 **THE RESIDENTIAL RATE DESIGN AS OPPOSED TO A BLOCKED RATE**  
10 **DESIGN.**

11 **A.** Previously, the portion of the customer-related costs not collected through the customer  
12 charge was recovered through the first block of the energy rate. The proposed rate  
13 design, which is based on full cost customer charges, eliminates the declining block  
14 energy rate structure. While varied arguments can be made for the appropriateness of a  
15 declining block rate design, the reality is that in today's environment such a design does  
16 not necessarily encourage customers to efficiently use electricity. In fact, it can provide  
17 the opposite price signal that the more you use, the less it costs per kWh. As such, the  
18 Company believes it is time to eliminate this declining block structure in conjunction  
19 with the establishment of the monthly customer charge based on the total customer-  
20 related costs.

1 **Q. PLEASE EXPLAIN THE COMPANY'S PROPOSED SMALL GENERAL**  
2 **SERVICE RATE DESIGN.**

3 A. The small general service schedule (GS-1) is applicable for general service to customers  
4 with maximum demands of less than 10 kW. Similar to residential service customers,  
5 small general service customers do not have demand metering and will pay distribution  
6 demand costs through a single per kWh energy charge applicable to all usage blocks.  
7 Customer related costs are proposed to be collected through the full cost customer charge.

8 **Q. PLEASE EXPLAIN THE PROPOSED CHANGES TO THE COMPANY'S**  
9 **COMMERCIAL AND INDUSTRIAL SERVICE RATE DESIGN.**

10 A. OPCo and CSP currently have several commercial and industrial schedules applicable to  
11 customers with demands greater than 10 kW. Schedules GS-2 and GS-3 are companion  
12 schedules available to customers depending upon the load factor and size (demand) of the  
13 customer. Schedule GS-2 is generally more beneficial for lower load factor customers  
14 whereas Schedule GS-3 is generally more beneficial for higher load factor customers.  
15 Schedule GS-4 is applicable to larger customers and/or customers served at higher  
16 voltage levels. Customers have the opportunity to choose the rate schedule best suited to  
17 their usage characteristics. This design is a legacy from when the Company's rates were  
18 bundled and no longer makes sense in the context of rates for distribution service only.  
19 In addition, OPCo currently has several end-use schedules (EHG, EHS and SS) for  
20 electric heating service and school service customers which have been in the process of  
21 elimination as approved by the Commission in the 1970's.

22 The costs of providing distribution service do not vary with volumetric usage, but  
23 vary based on the size (demand) of the customer and the voltage level at which the

1 customer is served due to the equipment required. Since all customers in this group have  
2 demand meters, distribution demand costs are proposed to be collected through demand  
3 charges which vary by voltage level. Because distribution costs do not vary with energy  
4 usage, distribution demand charges and full cost customer charges have been designed  
5 for all customers served under the demand-metered service schedules as a group,  
6 differentiated only by service voltage level. Thus the proposed rate design better reflects  
7 cost causation principles.

8 In the proposed rate design, all customers receiving service at a particular voltage  
9 level will pay the same distribution demand charge per kW and customer charge per  
10 month, regardless of whether that customer previously took service under current  
11 Schedule GS-2, GS-3 or GS-4. For the purposes of distribution charges, the current  
12 Schedules GS-2, GS-3, GS-4, EHG, EHS and SS customers will all be served under the  
13 proposed Schedule GS-2.

14 **Q. PLEASE EXPLAIN THE PROPOSED LIGHTING RATE DESIGN.**

15 A. Similar to the other rate designs, lighting rates are designed based on the costs of  
16 providing this service to customers. The costs of providing Outdoor/Area Lighting and  
17 Street Lighting service to customers include installation of lamps and fixtures as well as  
18 lamp maintenance and energy consumed. Such charges are primarily a fixed monthly  
19 charge based upon the type of lamp, fixture and other facilities installed.

20 **Q. PLEASE EXPLAIN OTHER PROPOSED RATES (IRP-D, AFS and SBS) WHICH**  
21 **YOU ARE SPONSORING.**

22 A. Distribution charges proposed in Schedule IRP-D (Interruptible Power – Discretionary)  
23 are identical to the distribution charges proposed in Schedule GS-2. Schedule AFS

1 (Alternate Feed Service) is being added for customers requesting redundant facilities for  
2 reliability purposes. The distribution demand charges proposed in Schedule AFS are  
3 consistent with the proposed Schedule GS-2 demand charges. AFS customers will pay an  
4 additional monthly charge for each kW of AFS capacity, which accounts for the added  
5 cost of providing such service. For Schedule SBS (Standby Service), backup distribution  
6 demand charges and maintenance energy charges are calculated consistent with the  
7 proposed Schedule GS-2 demand charges.

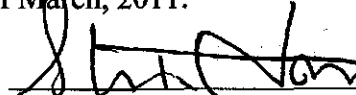
8 **Q. DOES THIS CONCLUDE YOUR PREFILED DIRECT TESTIMONY?**

9 **A. Yes.**



## CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of the Pre-Filed Direct Testimony of Thomas R. Zelina has been served upon the below-named counsel via First Class mail, postage prepaid, this 14<sup>th</sup> day of March, 2011.

  
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COMPANY EX. NO. \_\_\_\_\_

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for Approval to Change Accounting )  
Methods )

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**PREFILED DIRECT TESTIMONY OF  
WILLIAM E. AVERA  
ON BEHALF OF  
COLUMBUS SOUTHERN POWER COMPANY  
AND  
OHIO POWER COMPANY**

---

Management Policies, Practices & Organizations

Operating Income

Rate Base

Allocations

X Rate of Return

Rates and Tariffs

Other

Filed March 14<sup>th</sup>, 2011

## DIRECT TESTIMONY OF WILLIAM E. AVERA

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#### Exhibit

#### Description

|                |                                                       |
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| Exhibit WEA-1  | Qualifications of William E. Avera                    |
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BEFORE  
THE PUBLIC UTILITIES COMMISSION OF OHIO  
DIRECT TESTIMONY OF  
WILLIAM E. AVERA  
ON BEHALF OF  
COLUMBUS SOUTHERN POWER COMPANY AND  
OHIO POWER COMPANY

**I. INTRODUCTION**

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

2   A.   William E. Avera, 3907 Red River, Austin, Texas, 78751.

3   **Q.   IN WHAT CAPACITY ARE YOU EMPLOYED?**

4   A.   I am the President of FINCAP, Inc., a firm providing financial, economic, and  
5       policy consulting services to business and government.

**A.   Qualifications**

6   **Q.   PLEASE DESCRIBE YOUR QUALIFICATIONS AND EXPERIENCE.**

7   A.   I received a B.A. degree with a major in economics from Emory University. After  
8       serving in the U.S. Navy, I entered the doctoral program in economics at the  
9       University of North Carolina at Chapel Hill. Upon receiving my Ph.D., I joined  
10      the faculty at the University of North Carolina and taught finance in the Graduate  
11      School of Business. I subsequently accepted a position at the University of Texas  
12      at Austin where I taught courses in financial management and investment  
13      analysis. I then went to work for International Paper Company in New York City  
14      as Manager of Financial Education, a position in which I had responsibility for all  
15      corporate education programs in finance, accounting, and economics.

16             In 1977, I joined the staff of the Public Utility Commission of Texas  
17      ("PUCT") as Director of the Economic Research Division. During my tenure at  
18      the PUCT, I managed a division responsible for financial analysis, cost allocation

1 and rate design, economic and financial research, and data processing systems,  
2 and I testified in cases on a variety of financial and economic issues. Since  
3 leaving the PUCT, I have been engaged as a consultant. I have participated in a  
4 wide range of assignments involving utility-related matters on behalf of utilities,  
5 industrial customers, municipalities, and regulatory commissions. I have  
6 previously testified before the Federal Energy Regulatory Commission ("FERC"),  
7 as well as the Federal Communications Commission, the Surface Transportation  
8 Board (and its predecessor, the Interstate Commerce Commission), the Canadian  
9 Radio-Television and Telecommunications Commission, and regulatory agencies,  
10 courts, and legislative committees in over 40 states, including the Public Utilities  
11 Commission of Ohio ("PUCO" or the "Commission").

12 In 1995, I was appointed by the PUCT to the Synchronous Interconnection  
13 Committee to advise the Texas legislature on the costs and benefits of connecting  
14 Texas to the national electric transmission grid. In addition, I served as an outside  
15 director of Georgia System Operations Corporation, the system operator for  
16 electric cooperatives in Georgia.

17 I have served as Lecturer in the Finance Department at the University of  
18 Texas at Austin and taught in the evening graduate program at St. Edward's  
19 University for twenty years. In addition, I have lectured on economic and  
20 regulatory topics in programs sponsored by universities and industry groups. I  
21 have taught in hundreds of educational programs for financial analysts in  
22 programs sponsored by the Association for Investment Management and  
23 Research, the Financial Analysts Review, and local financial analysts societies.  
24 These programs have been presented in Asia, Europe, and North America,  
25 including the Financial Analysts Seminar at Northwestern University. I hold the  
26 Chartered Financial Analyst (CFA®) designation and have served as Vice

1 President for Membership of the Financial Management Association. I have also  
2 served on the Board of Directors of the North Carolina Society of Financial  
3 Analysts. I was elected Vice Chairman of the National Association of Regulatory  
4 Commissioners ("NARUC") Subcommittee on Economics and appointed to  
5 NARUC's Technical Subcommittee on the National Energy Act. I have also  
6 served as an officer of various other professional organizations and societies. A  
7 resume containing the details of my experience and qualifications is attached as  
8 Exhibit WEA-1.

#### **B. Overview**

9 **Q. FOR WHOM ARE YOU TESTIFYING IN THIS CASE?**

10 A. I am testifying on behalf of AEP Ohio, which is an operating unit of American  
11 Electric Power Company, Inc. ("AEP") and is comprised of Columbus Southern  
12 Power Company ("CSP") and Ohio Power Company ("OPCo"), hereby  
13 collectively referred to as AEP Ohio or the Company.

14 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

15 A. The purpose of my testimony is to present to the PUCO my independent  
16 assessment of the fair rate of return on equity ("ROE") that CSP and OPCo should  
17 be authorized to earn on their investment in providing electric utility service. In  
18 addition, I also examined the reasonableness of the Company's capital structure,  
19 considering both the specific risks faced by AEP Ohio, as well as other industry  
20 guidelines.

21 **Q. PLEASE SUMMARIZE THE BASIS OF YOUR KNOWLEDGE AND**  
22 **CONCLUSIONS CONCERNING THE ISSUES ON WHICH YOU ARE**  
23 **TESTIFYING IN THIS CASE.**

24 A. To prepare my testimony, I used information from a variety of sources that would  
25 normally be relied upon by a person in my capacity. In connection with the

1 present filing, I considered and relied upon corporate disclosures, publicly  
2 available financial reports and filings, and other published information relating to  
3 the Company and its parent company, AEP. I also reviewed information relating  
4 generally to capital market conditions and specifically to investor perceptions,  
5 requirements, and expectations for electric utilities. These sources, coupled with  
6 my experience in the fields of finance and utility regulation, have given me a  
7 working knowledge of the issues relevant to investors' required return for AEP  
8 Ohio, and they form the basis of my analyses and conclusions.

9 **Q. WHAT IS THE PRACTICAL TEST OF THE REASONABLENESS OF**  
10 **THE ROE USED IN SETTING A UTILITY'S RATES?**

11 A. The ROE compensates common equity investors for the use of their capital to  
12 finance the plant and equipment necessary to provide utility service. Investors  
13 commit capital only if they expect to earn a return on their investment  
14 commensurate with returns available from alternative investments with  
15 comparable risks. To be consistent with sound regulatory economics and the  
16 standards set forth by the Supreme Court in the *Bluefield*<sup>1</sup> and *Hope*<sup>2</sup> cases, a  
17 utility's allowed ROE should be sufficient to: (1) fairly compensate investors for  
18 capital invested in the utility, (2) enable the utility to offer a return adequate to  
19 attract new capital on reasonable terms, and (3) maintain the utility's financial  
20 integrity.

21 **Q. HOW IS YOUR TESTIMONY ORGANIZED?**

22 A. I first reviewed the operations and finances of CSP and OPCo and the general  
23 conditions in the electric utility industry and the capital markets. With this as a  
24 background, I conducted various well-accepted quantitative analyses to estimate

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<sup>1</sup> *Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm'n*, 262 U.S. 679 (1923).

<sup>2</sup> *Fed. Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944).



1 the current cost of equity, including alternative applications of the discounted cash  
2 flow ("DCF") model and the Capital Asset Pricing Model ("CAPM"), and also  
3 made reference to expected earned rates of return for utilities. Based on the cost  
4 of equity estimates indicated by my analyses, the Company's ROE was evaluated  
5 taking into account the specific risks and potential challenges for their  
6 jurisdictional electric utility operations in Ohio, as well as flotation costs, which  
7 are properly considered in setting a fair rate of return on equity.

### C. Summary of Conclusions

8 **Q. WHAT ARE YOUR FINDINGS REGARDING THE FAIR RATE OF**  
9 **RETURN ON EQUITY FOR THE COMPANY?**

10 **A.** Based on the results of my analyses and the economic requirements necessary to  
11 support continuous access to capital, I recommend an ROE for the AEP Ohio  
12 from the middle of my 10.55 percent to 11.55 percent reasonable range, or 11.15  
13 percent. The bases for my conclusion are summarized below:

- 14 • In order to reflect the risks and prospects associated with the Company's  
15 jurisdictional utility operations, my analyses focused on a proxy group of  
16 other electric utilities with comparable investment risks. Consistent with  
17 the fact that utilities must compete for capital with firms outside their own  
18 industry, I also referenced a proxy group of comparable risk companies in  
19 the non-utility sector of the economy;
- 20 • Because investors' required return on equity is unobservable and no single  
21 method should be viewed in isolation, I applied both the DCF and CAPM  
22 methods, as well as the expected earnings approach, to estimate a fair  
23 ROE;
- 24 • Based on the results of these analyses, and giving less weight to extremes  
25 at the high and low ends of the range, I concluded that the cost of equity  
26 for the proxy groups of utilities and non-utility companies is in the 10.4  
27 percent to 11.4 percent range, or 10.55 percent to 11.55 percent after  
28 incorporating a minimal adjustment to account for the impact of common  
29 equity flotation costs;
- 30 • The reasonableness of an 11.15 percent ROE for AEP Ohio, which falls at  
31 the midpoint of my reasonable range, is also supported by the exposures

1 associated with environmental mandates, the need to consider the expected  
2 upward trend in capital costs, and the need to support access to capital.

3 **Q. WHAT OTHER EVIDENCE DID YOU CONSIDER IN EVALUATING**  
4 **YOUR ROE RECOMMENDATION IN THIS CASE?**

5 A. My recommendation was reinforced by the following findings:

- 6 • Sensitivity to financial market and regulatory uncertainties has increased  
7 dramatically and investors recognize that constructive regulation is a key  
8 ingredient in supporting utility credit standing and financial integrity; and,
- 9 • Providing the AEP Ohio with the opportunity to earn a return that reflects  
10 these realities is an essential ingredient to support AEP Ohio's financial  
11 position, which ultimately benefits customers by ensuring reliable service  
12 at lower long-run costs.

13 **Q. WHAT IS YOUR CONCLUSION AS TO THE REASONABLENESS OF**  
14 **THE COMPANY'S CAPITAL STRUCTURE?**

15 A. Based on my evaluation, I concluded that a common equity ratio of 52.8 percent  
16 represents a reasonable capitalization for AEP Ohio. This conclusion was based  
17 on the following findings:

- 18 • The common equity ratio implied by AEP Ohio's combined capital  
19 structure falls within the range of capitalizations maintained by the proxy  
20 group of utilities based on data at year-end and near-term expectations;
- 21 • The additional leverage implied by the Company's obligations under  
22 operating leases warrant a more conservative financial posture; and,
- 23 • The requested capitalization reflects the need to support the credit standing  
24 and financial flexibility of the AEP Ohio as it seeks to fund system  
25 investments and meet the requirements of their customers.

## II. FUNDAMENTAL ANALYSES

26 **Q. WHAT IS THE PURPOSE OF THIS SECTION?**

27 A. As a predicate to subsequent quantitative analyses, this section briefly reviews the  
28 operations and finances of CSP and OPCo. In addition, it examines the risks and  
29 prospects for the electric utility industry and conditions in the capital markets and

1 the general economy. An understanding of the fundamental factors driving the  
2 risks and prospects of electric utilities is essential in developing an informed  
3 opinion of investors' expectations and requirements that are the basis of a fair rate  
4 of return.

**A. Columbus Southern Power Company and Ohio Power Company**

5 **Q. BRIEFLY DESCRIBE AEP OHIO AND ITS ELECTRIC UTILITY**  
6 **OPERATIONS.**

7 A. Both CSP and OPCo are wholly-owned subsidiaries of AEP principally engaged  
8 in providing electric generation, transmission, and distribution utility service.  
9 CSP provides service to approximately 749,000 retail customers in Ohio, in  
10 addition to supplying and marketing electric power at wholesale to other electric  
11 utilities, municipalities and other market participants. CSP's two separate service  
12 territories include portions of twenty-five Ohio counties, with one area including  
13 the City of Columbus and the other being a predominantly rural area in south  
14 central Ohio.

15 OPCo provides electric utility service to approximately 710,000 retail  
16 customers in the northwestern, east central, eastern and southern sections of Ohio.  
17 Like CSP, OPCo also provides electric power at wholesale, including to its  
18 affiliate, Wheeling Power Company ("WPCo"). WPCo, which purchases all of its  
19 electric power needs from OPCo, provides electric service to approximately  
20 41,000 retail customers in northern West Virginia. At September 30, 2010, CSP  
21 had total assets of \$4.4 billion, with OPCo's assets amounting to \$8.7 billion. In  
22 October 2010, the Company filed an application to merge with the PUCO, which  
23 would result in a combined rate structure.

24 Together, AEP Ohio operates over 12,200 megawatts ("MW") of  
25 generating capacity and, along with other operating subsidiaries of AEP, are

1 parties to an interconnection agreement that defines how they share the costs and  
2 benefits associated with their respective generating plants. The Company's  
3 transmission and distribution facilities consist of over 46,000 miles of  
4 transmission and distribution lines. CSP and OPCo are members of PJM  
5 Interconnection, LLC ("PJM"), a FERC-approved transmission organization, and  
6 as part of the AEP-East zone provide regional transmission service pursuant to the  
7 PJM Open Access Transmission Tariff.

8 CSP and OPCo operate as functionally separated utilities and provide  
9 "default" retail electric service to retail customers at unbundled rates. The electric  
10 market framework in Ohio remains in transition, although approval of the Electric  
11 Security Plan ("ESP") provides near-term clarity through 2011. The ESP  
12 established rates for standard offer service and provides for a fuel adjustment  
13 clause mechanism, subject to specific rate caps. Certain amounts over the  
14 authorized percentage increase allowed under the caps can be deferred for future  
15 recovery. Under the ESP, the Company is also subject to a Significantly  
16 Excessive Earnings Test ("SEET"), which requires that the PUCO evaluate the  
17 earned rates of return of each electric utility with an approved ESP.

18 **Q. PLEASE DESCRIBE THE AEP SYSTEM.**

19 A. AEP delivers electricity to more than 5 million customers across 11 states,  
20 including Ohio, Indiana, West Virginia, Virginia, Kentucky, Michigan, Tennessee,  
21 Oklahoma, Texas, Louisiana, and Arkansas. AEP is one of the largest electric  
22 utilities in the U.S., with its combined utility system including over 38,000 MW  
23 of generating capacity and over 225,000 miles of transmission and distribution  
24 lines. AEP's electric utility subsidiaries rely primarily on coal-fired generation,  
25 which makes up approximately 76 percent of total capacity in the Eastern zone of

1 the AEP system that includes AEP Ohio. During 2009, AEP's revenues totaled  
2 approximately \$13.5 billion, with total assets at year-end of \$48.3 billion.

3 **Q. WHERE DOES AEP OHIO OBTAIN THE CAPITAL USED TO FINANCE**  
4 **ITS INVESTMENT IN ELECTRIC UTILITY PLANT?**

5 A. As wholly-owned subsidiaries of AEP, the CSP and OPCo obtain common equity  
6 capital solely from their parent, whose common stock is publicly traded on the  
7 New York Stock Exchange. In addition to capital supplied by AEP, CSP and  
8 OPCo also issue debt securities directly under their own names.

9 **Q. WHAT CREDIT RATINGS HAVE BEEN ASSIGNED TO AEP OHIO?**

10 A. Currently, CSP and OPCo are assigned a corporate credit rating of "BBB" by  
11 Standard & Poor's Corporation (S&P). Moody's Investors Service (Moody's) has  
12 assigned an issuer rating of "A3" to CSP, with OPCo's issuer rating being one  
13 notch lower at "Baa1". Meanwhile, Fitch Ratings Ltd. (Fitch) has assigned a  
14 "BBB+" issuer default rating to CSP, while rating OPCo one notch lower at  
15 "BBB".

#### **B. Risks for AEP Ohio**

16 **Q. HOW HAVE INVESTORS' RISK PERCEPTIONS FOR THE UTILITY**  
17 **INDUSTRY EVOLVED?**

18 A. Implementation of structural change, along with other factors impacting the  
19 economy and the industry, has caused investors to rethink their assessment of the  
20 relative risks associated with utilities. The past decade witnessed steady erosion  
21 in credit quality throughout the utility industry, both as a result of revised  
22 perceptions of the risks in the industry and the weakened finances of the utilities  
23 themselves. S&P recently reported that the majority of the companies in the

1 utility sector now fall in the triple-B rating category.<sup>3</sup> In December 2009, S&P  
2 observed with respect to the industry's future that:

3 Looming costs associated with environmental compliance, slack  
4 demand caused by economic weakness, the potential for permanent  
5 demand destruction caused by changes in consumer behavior and  
6 closing of manufacturing facilities, and numerous regulatory filings  
7 seeking recovery of costs are some of the significant challenges the  
8 industry has to deal with.<sup>4</sup>

9 **Q. DOES THE COMPANY ANTICIPATE THE NEED FOR ADDITIONAL**  
10 **CAPITAL GOING FORWARD?**

11 A. Yes. AEP Ohio will require capital investment to provide for necessary  
12 maintenance and replacements of its utility infrastructure, as well as to fund new  
13 investment in electric generation, transmission and distribution facilities. AEP  
14 plans to invest an additional \$2.6 billion in utility assets during 2011 and \$2.9  
15 billion in 2012,<sup>5</sup> while combined construction expenditures at CSP and OPCo are  
16 anticipated to total over \$454 million in 2011 alone.<sup>6</sup> In addition, AEP Ohio must  
17 refinance scheduled maturities of \$195 million in 2012 and \$806 million in 2013.  
18 Support for AEP Ohio's financial integrity and flexibility will be instrumental in  
19 attracting the capital required to fund these needs in an effective manner.

20 **Q. IS THE POTENTIAL FOR ENERGY MARKET VOLATILITY AN**  
21 **ONGOING CONCERN FOR INVESTORS?**

22 A. Yes. In recent years utilities and their customers have had to contend with  
23 dramatic fluctuations in fuel costs due to ongoing price volatility in the spot

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<sup>3</sup> Standard & Poor's Corporation, "Ratings Trend In U.S. Electric Utility Sector Turns More Negative In First Quarter Of 2010," *RatingsDirect* (Apr. 16, 2010).

<sup>4</sup> Standard & Poor's Corporation, "U.S. Regulated Electric Utilities Head Into 2010 With Familiar Concerns," *RatingsDirect* (Dec. 28, 2009).

<sup>5</sup> American Electric Power Company, Inc., *BMO Capital Markets 6<sup>th</sup> Annual Utilities Conference* (Nov. 30, 2010).

<sup>6</sup> *Direct Testimony of Joseph Hamrock at Exhibit JH-1, Case No. 10-1261-EL-UNC.*

1 markets, and investors recognize the potential for further turmoil in energy  
2 markets. In times of extreme volatility, utilities can quickly find themselves in a  
3 significant under-recovery position with respect to power costs, which can  
4 severely stress liquidity. Coal has historically provided relative stability with  
5 respect to fuel costs, but prices experienced significant volatility over the 2007 –  
6 2009 time period. The power industry and its customers have also had to contend  
7 with dramatic fluctuations in gas costs due to ongoing price volatility in the spot  
8 markets.

9 While current expectations for significantly lower power prices reflect  
10 weaker fundamentals affecting current load and fuel prices, investors recognize  
11 the potential that such trends could quickly reverse. S&P observed that “short-  
12 term price volatility from numerous possibilities ... is always possible,”<sup>7</sup> while  
13 Fitch noted, “uncertainty regarding fuel prices, in particular natural gas costs, has  
14 made planning for the future even more problematic.”<sup>8</sup> Moody’s concluded that  
15 utilities remain exposed to fluctuations in energy prices, observing, “This view,  
16 that commodity prices remain low, could easily be proved incorrect, due to the  
17 evidence of historical volatility.”<sup>9</sup>

18 **Q. ARE CSP AND OPCO PROTECTED FROM EXPOSURE TO**  
19 **FLUCTUATIONS IN POWER SUPPLY COSTS THROUGH THE ESP?**

20 A. To a limited extent, yes. If applied as intended, the ESP supports the Company’s  
21 financial integrity and is an example of constructive regulation. But even for  
22 utilities with energy cost adjustment mechanisms in place, there can be a

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<sup>7</sup> Standard & Poor’s Corporation, “Top 10 Investor Questions: U.S. Regulated Electric Utilities,”  
*RatingsDirect* (Jan. 22, 2010).

<sup>8</sup> Fitch Ratings, Ltd., “Electric Utility Capital Spending: The Show Will Go On,” *Global Power U.S. and  
Canada Special Report* (Oct. 14, 2009).

<sup>9</sup> Moody’s Investors Service, “U.S. Electric Utilities: Uncertain Times Ahead; Strengthening Balance  
Sheets Now Would Protect Credit,” *Special Comment* (Oct. 28, 2010).

1 significant lag between the time the utility actually incurs the expenditure and  
2 when it is recovered from ratepayers. As a result, the ESP does not insulate AEP  
3 Ohio from the need to finance deferred power production and supply costs.  
4 Indeed, despite the significant investment of resources to manage fuel  
5 procurement, investors are aware that the best that AEP Ohio can do is to recover  
6 its actual costs. In other words, the Company earns no return on fuel costs and are  
7 exposed to disallowances for imprudence in its fuel procurement.

8 **Q. WHAT OTHER FINANCIAL PRESSURES IMPACT INVESTORS' RISK**  
9 **ASSESSMENT OF AEP OHIO?**

10 A. Investors are aware of the financial and regulatory pressures faced by utilities  
11 associated with rising costs and the need to undertake significant capital  
12 investments. As Moody's observed:

13 Utilities remain exposed to large, long-term capital investment  
14 challenges, volatile commodity prices and legal judgments that can  
15 wreak havoc on even the strongest liquidity profiles.<sup>10</sup>

16 Similarly, S&P noted that cost increases and capital projects, along with uncertain  
17 load growth, were a significant challenge to the utility industry.<sup>11</sup> Fitch reached  
18 similar conclusions:

19 The combination of high capital expenditures and relatively weak  
20 electricity demand will continue to pressure credit quality and  
21 require base rate increases in 2010 and beyond.<sup>12</sup>

22 As noted earlier, investors anticipate that the Company and AEP will undertake  
23 significant electric utility capital expenditures. While providing the infrastructure

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<sup>10</sup> Moody's Investors Service, "U.S. Electric Utilities Face Challenges Beyond Near-Term," *Industry Outlook* (January 2010).

<sup>11</sup> Standard & Poor's Corporation, "Industry Economic And Ratings Outlook," *RatingsDirect* (Feb. 2, 2010).

<sup>12</sup> Fitch Ratings Ltd., "U.S. Utilities, Power, and Gas 2010 Outlook," *Global Power North America Special Report* (Dec. 4, 2009).



1 necessary to meet the energy needs of customers is certainly desirable, it imposes  
2 additional financial responsibilities on AEP Ohio.

3 **Q. ARE ENVIRONMENTAL CONSIDERATIONS ALSO AFFECTING**  
4 **INVESTORS' EVALUATION OF ELECTRIC UTILITIES, INCLUDING**  
5 **AEP OHIO?**

6 A. Yes. Although AEP Ohio's exposure has been moderated through its ability to  
7 recoup certain environmental-related expenditures through the ESP, utilities are  
8 confronting increased environmental pressures that could impose significant  
9 uncertainties and costs. Moody's noted that "the prospect for new environmental  
10 emission legislation – particularly concerning carbon dioxide – represents the  
11 biggest emerging issue for electric utilities."<sup>13</sup> While the momentum for carbon  
12 emissions legislation has slowed, expectations for eventual regulations continue to  
13 pose uncertainty. Fitch recently concluded, "Prospects of costly environmental  
14 regulations will create uncertainty for investors in the electricity business in  
15 2011."<sup>14</sup> With respect to AEP Ohio, Moody's concluded:

16 Most of the electric generation in Ohio – about 80% – is derived  
17 from coal-fired facilities. This exposure to coal-fired generation  
18 puts incremental risks on the state amid the prospect of  
19 increasingly stringent environmental regulations – especially  
20 regarding carbon dioxide emissions.<sup>15</sup>

21 S&P confirmed this view, noting that, "material compliance costs related to  
22 multiple forthcoming and pending emissions rules could pressure credit  
23 quality."<sup>16</sup>

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<sup>13</sup> Moody's Investors Service, "U.S. Investor-Owned Electric Utilities," *Industry Outlook* (Jan. 2009).

<sup>14</sup> Fitch Ratings Ltd., "2011 Outlook: U.S. Utilities, Power, and Gas," *Global Power North America Special Report* (Dec. 20, 2010)

<sup>15</sup> Moody's Investors Service, "Investor-Owned Electric Utilities in Ohio," *Special Comment* (Feb. 2009).

<sup>16</sup> Standard & Poor's Corporation, "Ohio Power Co.," *RatingsDirect* (Dec. 16, 2010).

### C. Impact of Capital Market Conditions

1 Q. WHAT ARE THE IMPLICATIONS OF RECENT CAPITAL MARKET  
2 CONDITIONS?

3 A. The deep financial and real estate crisis that the country experienced in late 2008,  
4 and continuing into 2009 led to unprecedented price fluctuations in the capital  
5 markets as investors dramatically revised their risk perceptions and required  
6 returns. As a result of investors' trepidation to commit capital, stock prices  
7 declined sharply while the yields on corporate bonds experienced a dramatic  
8 increase.

9 With respect to utilities specifically, as of December 2010, the Dow Jones  
10 Utility Average stock index remained approximately 25 percent below the  
11 previous high reached in May 2008. This prolonged sell-off in common stocks  
12 and sharp fluctuations in utility bond yields reflect the fact that the utility industry  
13 is not immune to the impact of financial market turmoil and the ongoing  
14 economic downturn. As the Edison Electric Institute ("EEI") noted in a letter to  
15 congressional representatives in September 2008 as the financial crisis intensified,  
16 capital market uncertainties have serious implications for utilities and their  
17 customers:

18 In the wake of the continuing upheaval on Wall Street, capital  
19 markets are all but immobilized, and short-term borrowing costs to  
20 utilities have already increased substantially. If the financial crisis is  
21 not resolved quickly, financial pressures on utilities will intensify  
22 sharply, resulting in higher costs to our customers and, ultimately,  
23 could compromise service reliability.<sup>17</sup>

24 Similarly, an October 1, 2008 *Wall Street Journal* report confirmed that utilities  
25 had been forced to delay borrowing or pursue more costly alternatives to raise

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<sup>17</sup> Letter to House of Representatives, Thomas R. Kuhn, President, Edison Electric Institute (Sep. 24, 2008).

1 funds.<sup>18</sup> In December 2008, Fitch confirmed “sharp repricing of and aversion to  
2 risk in the investment community,” and noted that the disruptions in financial  
3 markets and the fundamental shift in investors’ risk perceptions had increased the  
4 cost of capital for utilities.<sup>19</sup>

5 While conditions have improved significantly since the depths of the  
6 crisis, investors have nonetheless had to confront ongoing fluctuations in share  
7 prices and stress in the credit markets. As the Wall Street Journal noted in  
8 February 2010:

9 Stocks pulled out of a 167-point hole with a late rally Friday,  
10 capping a wild week reminiscent of the most volatile days of the  
11 credit crisis. ... It was a return to the unusual relationships, or  
12 correlations, seen at major flash points over the past two years when  
13 investors fled risky assets and jumped into safe havens. This market  
14 behavior, which has reasserted itself repeatedly since the financial  
15 crisis began, suggests that investment decisions are still being driven  
16 more by government support and liquidity concerns than market  
17 fundamentals.<sup>20</sup>

18 In response to renewed capital market uncertainties initiated by ongoing  
19 concerns over the European sovereign debt crisis and the sustainability of  
20 economic growth, investors have repeatedly fled to the safety of U.S. Treasury  
21 bonds, and stock prices have experienced renewed volatility. The dramatic rise in  
22 the price of gold and other commodities also attests to investors’ heightened  
23 concerns over prospective challenges and risks, including the overhanging threat  
24 of inflation and renewed economic turmoil. With respect to electric utilities, Fitch  
25 observed that, “the outlook for the sector would be adversely affected by

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<sup>18</sup> Smith, Rebecca, “Corporate News: Utilities’ Plans Hit by Credit Markets,” *Wall Street Journal* at B4 (Oct. 1, 2008).

<sup>19</sup> Fitch Ratings Ltd., “U.S. Utilities, Power and Gas 2009 Outlook,” *Global Power North America Special Report* (Dec. 22, 2008).

<sup>20</sup> Gongloff, Mark, “Stock Rebound Is a Crisis Flashback – Late Surge Recalls Market’s Volatility at Peak of Credit Difficulties; Unusual Correlations,” *Wall Street Journal* at B1 (Feb. 6, 2010).

1 significantly higher inflation and interest rates.”<sup>21</sup> Uncertainties surrounding  
2 economic and capital market conditions heighten the risks faced by electric  
3 utilities, which, as described earlier, face a variety of operating and financial  
4 challenges.

5 **Q. HOW DO INTEREST RATES ON LONG-TERM BONDS COMPARE**  
6 **WITH THOSE PROJECTED FOR THE NEXT FEW YEARS?**

7 A. Table WEA-1 below compares current interest rates on 30-year Treasury bonds,  
8 triple-A rated corporate bonds, and double-A rated utility bonds with near-term  
9 projections from the Value Line Investment Survey (“Value Line”), IHS Global  
10 Insight, Blue Chip Financial Forecasts (“Blue Chip”), and the Energy Information  
11 Administration (“EIA”), which is a statistical agency of the U.S. Department of  
12 Energy (“DOE”):

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<sup>21</sup> Fitch Ratings Ltd., “2011 Outlook: U.S. Utilities, Power, and Gas,” *Global Power North America Special Report* (Dec. 20, 2010).

**TABLE WEA-1  
INTEREST RATE TRENDS**

|                        | <u>2012</u> | <u>2013</u> | <u>2014</u> | <u>2015</u> | <u>Current (a)</u> |
|------------------------|-------------|-------------|-------------|-------------|--------------------|
| 30-Yr. Treasury        |             |             |             |             |                    |
| Value Line (b)         | 4.7%        | 5.5%        | 5.8%        | --          | 4.0%               |
| IHS Global Insight (c) | 3.8%        | 5.0%        | 5.1%        | 6.0%        | 4.0%               |
| Blue Chip (d)          | 4.8%        | 5.2%        | 5.4%        | 5.5%        | 4.0%               |
| AAA Corporate          |             |             |             |             |                    |
| Value Line (b)         | 5.6%        | 6.0%        | 6.5%        | --          | 4.8%               |
| IHS Global Insight (c) | 4.7%        | 6.0%        | 6.2%        | 6.8%        | 4.8%               |
| Blue Chip (d)          | 5.4%        | 5.8%        | 6.1%        | 6.3%        | 4.8%               |
| S&P (e)                | 6.7%        | 7.7%        | 7.6%        | --          | 4.8%               |
| AA Utility             |             |             |             |             |                    |
| IHS Global Insight (c) | 5.0%        | 6.2%        | 6.4%        | 7.2%        | 5.0%               |
| EIA (f)                | 5.5%        | 6.4%        | 7.0%        | 7.4%        | 5.0%               |

- 
- (a) Based on monthly average bond yields for the six-month period Aug. 2010 - Jan. 2011 reported at [www.credittrends.moodys.com](http://www.credittrends.moodys.com) and <http://www.federalreserve.gov/releases/h15/data.htm>.  
(b) The Value Line Investment Survey, Forecast for the U.S. Economy (Nov. 26, 2010).  
(c) IHS Global Insight, *U.S. Economic Outlook* at 19 (September 2010).  
(d) *Blue Chip Financial Forecasts*, Vol. 29, No. 12 (Dec. 1, 2010).  
(e) Standard & Poor's Corporation, "U.S. Economic Forecast: A More Prosperous 2011?," *RatingsDirect* (Jan. 5, 2011).  
(f) Energy Information Administration, *Annual Energy Outlook 2011 Early Release* (Dec. 16, 2010).

As evidenced above, there is a clear consensus that the cost of permanent capital will be higher in the 2012-2015 timeframe than it is currently. As a result, current cost of capital estimates are likely to understate investors' requirements at the time the outcome of this proceeding becomes effective and beyond.

**Q. WHAT DO THESE EVENTS IMPLY WITH RESPECT TO THE ROE FOR AEP OHIO?**

A. No one knows the future of our complex global economy. We know that the financial crisis had been building for a long time, and few predicted that the economy would fall as rapidly as it has, or that corporate bond yields would fluctuate as dramatically as they did. While conditions in the economy and capital markets appear to have stabilized significantly since 2009, investors

1 continue to react swiftly and negatively to any future signs of trouble in the  
2 financial system or economy. The fact remains that the electric utility industry  
3 requires significant new capital investment. Given the importance of reliable  
4 electric utility service, it would be unwise to ignore investors' increased  
5 sensitivity to risk and future capital market trends in evaluating a fair ROE in this  
6 case. Similarly, AEP Ohio's capital structure must also preserve the financial  
7 flexibility necessary to maintain access to capital even during times of  
8 unfavorable market conditions.

### **III. CAPITAL MARKET ESTIMATES**

9 **Q. WHAT IS THE PURPOSE OF THIS SECTION?**

10 A. This section presents capital market estimates of the cost of equity. First, I  
11 address the concept of the cost of common equity, along with the risk-return  
12 tradeoff principle fundamental to capital markets. Next, I describe DCF and  
13 CAPM analyses conducted to estimate the cost of common equity for benchmark  
14 groups of comparable risk firms and evaluate expected earned rates of return for  
15 utilities. Finally, I examine flotation costs, which are properly considered in  
16 evaluating a fair rate of return on equity.

#### **A. Economic Standards**

17 **Q. WHAT ROLE DOES THE RATE OF RETURN ON COMMON EQUITY**  
18 **PLAY IN A UTILITY'S RATES?**

19 A. The return on common equity is the cost of inducing and retaining investment in  
20 the utility's physical plant and assets. This investment is necessary to finance the  
21 asset base needed to provide utility service. Investors will commit money to a  
22 particular investment only if they expect it to produce a return commensurate with  
23 those from other investments with comparable risks. Moreover, the return on

1 common equity is integral in achieving the sound regulatory objectives of rates  
2 that are sufficient to: 1) fairly compensate capital investment in the utility, 2)  
3 enable the utility to offer a return adequate to attract new capital on reasonable  
4 terms, and 3) maintain the utility's financial integrity. Meeting these objectives  
5 allows the utility to fulfill its obligation to provide reliable service while meeting  
6 the needs of customers through necessary system expansion.

7 **Q. WHAT FUNDAMENTAL ECONOMIC PRINCIPLE UNDERLIES THE**  
8 **COST OF EQUITY CONCEPT?**

9 A. The fundamental economic principle underlying the cost of equity concept is the  
10 notion that investors are risk averse. In capital markets where relatively risk-free  
11 assets are available (e.g., U.S. Treasury securities), investors can be induced to  
12 hold riskier assets only if they are offered a premium, or additional return, above  
13 the rate of return on a risk-free asset. Because all assets compete with each other  
14 for investor funds, riskier assets must yield a higher expected rate of return than  
15 safer assets to induce investors to invest and hold them.

16 Given this risk-return tradeoff, the required rate of return ( $k$ ) from an asset  
17 (i) can generally be expressed as:

$$18 \quad k_i = R_f + RP_i$$

19 where:  $R_f$  = Risk-free rate of return, and  
20  $RP_i$  = Risk premium required to hold riskier asset i.

21 Thus, the required rate of return for a particular asset at any time is a function of:  
22 (1) the yield on risk-free assets, and (2) the asset's relative risk, with investors  
23 demanding correspondingly larger risk premiums for bearing greater risk.

- 1    **Q.    IS THERE EVIDENCE THAT THE RISK-RETURN TRADEOFF**  
2       **PRINCIPLE ACTUALLY OPERATES IN THE CAPITAL MARKETS?**
- 3    A.    Yes. The risk-return tradeoff can be readily documented in segments of the  
4       capital markets where required rates of return can be directly inferred from market  
5       data and where generally accepted measures of risk exist. Bond yields, for  
6       example, reflect investors' expected rates of return, and bond ratings measure the  
7       risk of individual bond issues. The observed yields on government securities,  
8       which are considered free of default risk, and bonds of various rating categories  
9       demonstrate that the risk-return tradeoff does, in fact, exist in the capital markets.
- 10   **Q.    DOES THE RISK-RETURN TRADEOFF OBSERVED WITH FIXED**  
11       **INCOME SECURITIES EXTEND TO COMMON STOCKS AND OTHER**  
12       **ASSETS?**
- 13   A.    It is generally accepted that the risk-return tradeoff evidenced with long-term debt  
14       extends to all assets. Documenting the risk-return tradeoff for assets other than  
15       fixed income securities, however, is complicated by two factors. First, there is no  
16       standard measure of risk applicable to all assets. Second, for most assets –  
17       including common stock – required rates of return cannot be directly observed.  
18       Yet there is every reason to believe that investors exhibit risk aversion in deciding  
19       whether or not to hold common stocks and other assets, just as when choosing  
20       among fixed-income securities.
- 21   **Q.    IS THIS RISK-RETURN TRADEOFF LIMITED TO DIFFERENCES**  
22       **BETWEEN FIRMS?**
- 23   A.    No. The risk-return tradeoff principle applies not only to investments in different  
24       firms, but also to different securities issued by the same firm. The securities  
25       issued by a utility vary considerably in risk because they have different  
26       characteristics and priorities. Long-term debt is senior among all capital in its



1 claim on a utility's net revenues and is, therefore, the least risky. The last  
2 investors in line are common shareholders. They receive only the net revenues, if  
3 any, remaining after all other claimants have been paid. As a result, the rate of  
4 return that investors require from a utility's common stock, the most junior and  
5 riskiest of its securities, must be considerably higher than the yield offered by the  
6 utility's senior, long-term debt.

7 **Q. WHAT DOES THE ABOVE DISCUSSION IMPLY WITH RESPECT TO**  
8 **ESTIMATING THE COST OF COMMON EQUITY FOR A UTILITY?**

9 A. Although the cost of common equity cannot be observed directly, it is a function  
10 of the returns available from other investment alternatives and the risks to which  
11 the equity capital is exposed. Because it is not readily observable, the cost of  
12 common equity for a particular utility must be estimated by analyzing information  
13 about capital market conditions generally, assessing the relative risks of the  
14 company specifically, and employing various quantitative methods that focus on  
15 investors' required rates of return. These various quantitative methods typically  
16 attempt to infer investors' required rates of return from stock prices, interest rates,  
17 or other capital market data.

18 **Q. DID YOU RELY ON A SINGLE METHOD TO ESTIMATE THE COST OF**  
19 **COMMON EQUITY?**

20 A. No. In my opinion, no single method or model should be relied on by itself to  
21 determine a utility's cost of common equity because no single approach can be  
22 regarded as definitive. Therefore, I applied both the DCF and CAPM methods to  
23 estimate the cost of common equity. In addition, I also evaluated a fair ROE  
24 using an earnings approach based on investors' current expectations in the capital  
25 markets. In my opinion, comparing estimates produced by one method with those

1 produced by other approaches ensures that the estimates of the cost of common  
2 equity pass fundamental tests of reasonableness and economic logic.

### **B. Comparable Risk Proxy Groups**

3 **Q. HOW DID YOU IMPLEMENT THESE QUANTITATIVE METHODS TO**  
4 **ESTIMATE THE COST OF COMMON EQUITY FOR THE COMPANY?**

5 A. Application of the DCF model and other quantitative methods to estimate the cost  
6 of common equity requires observable capital market data, such as stock prices.  
7 Moreover, even for a firm with publicly traded stock, the cost of common equity  
8 can only be estimated. As a result, applying quantitative models using observable  
9 market data only produces an estimate that inherently includes some degree of  
10 observation error. Thus, the accepted approach to increase confidence in the  
11 results is to apply the DCF model and other quantitative methods to a proxy group  
12 of publicly traded companies that investors regard as risk-comparable.

13 **Q. WHAT SPECIFIC PROXY GROUP OF UTILITIES DID YOU RELY ON**  
14 **FOR YOUR ANALYSIS?**

15 A. In order to reflect the risks and prospects associated with AEP Ohio's  
16 jurisdictional utility operations, my DCF analyses focused on a reference group of  
17 other utilities composed of those companies classified by Value Line as electric  
18 utilities with: (1) S&P corporate credit ratings of "BBB-" to "BBB+", (2) a Value  
19 Line Safety Rank of "2" or "3", 3) a Value Line Financial Strength Rating of  
20 "B+" to "A", and (4) a market capitalization of \$1.6 billion or greater. In  
21 addition, I eliminated four utilities (Allegheny Energy, Inc., FirstEnergy Corp.,  
22 Northeast Utilities, and Progress Energy, Inc.) that otherwise would have been in  
23 the proxy group, but are not appropriate for inclusion because they are currently  
24 involved in a major merger or acquisition. These criteria resulted in a proxy

1 group composed of 22 companies, which I will refer to as the "Utility Proxy  
2 Group."

3 **Q. WHAT OTHER PROXY GROUP DID YOU CONSIDER IN EVALUATING**  
4 **A FAIR ROE?**

5 A. Under the regulatory standards established by *Hope* and *Bluefield*, the salient  
6 criterion in establishing a meaningful benchmark to evaluate a fair ROE is relative  
7 risk, not the particular business activity or degree of regulation. With regulation  
8 taking the place of competitive market forces, required returns for utilities should  
9 be in line with those of non-utility firms of comparable risk operating under the  
10 constraints of free competition. Consistent with this accepted regulatory standard,  
11 I also applied the DCF model to a reference group of comparable risk companies  
12 in the non-utility sectors of the economy. I refer to this group as the "Non-Utility  
13 Proxy Group".

14 **Q. DO UTILITIES HAVE TO COMPETE WITH NON-REGULATED FIRMS**  
15 **FOR CAPITAL?**

16 A. Yes. The cost of capital is an opportunity cost based on the returns that investors  
17 could realize by putting their money in other alternatives. Clearly, the total  
18 capital invested in utility stocks is only the tip of the iceberg of total common  
19 stock investment, and there are a plethora of other enterprises available to  
20 investors beyond those in the utility industry. Utilities must compete for capital,  
21 not just against firms in their own industry, but with other investment  
22 opportunities of comparable risk.

23 **Q. IS IT CONSISTENT WITH THE *BLUEFIELD* AND *HOPE* CASES TO**  
24 **CONSIDER REQUIRED RETURNS FOR NON-UTILITY COMPANIES?**

25 A. Yes. Returns in the competitive sector of the economy form the very  
26 underpinning for utility ROEs because regulation purports to serve as a substitute

1 for the actions of competitive markets. The Supreme Court has recognized that it  
2 is the degree of risk, not the nature of the business, which is relevant in evaluating  
3 an allowed ROE for a utility. The *Bluefield* case refers to "business undertakings  
4 attended with comparable risks and uncertainties." It does not restrict  
5 consideration to other utilities. Similarly, the *Hope* case states:

6 By that standard the return to the equity owner should be  
7 commensurate with returns on investments in other enterprises  
8 having corresponding risks.<sup>22</sup>

9 As in the *Bluefield* decision, there is nothing to restrict "other enterprises" solely  
10 to the utility industry.

11 Indeed, in teaching regulatory policy I usually observe that in the early  
12 applications of the comparable earnings approach, utilities were explicitly  
13 eliminated due to a concern about circularity. In other words, soon after the *Hope*  
14 decision regulatory commissions did not want to get involved in circular logic by  
15 looking to the returns of utilities that were established by the same or similar  
16 regulatory commissions in the same geographic region. To avoid circularity,  
17 regulators looked only to the returns of non-utility companies.

18 **Q. DOES CONSIDERATION OF THE RESULTS FOR THE NON-UTILITY**  
19 **PROXY GROUP MAKE THE ESTIMATION OF THE COST OF EQUITY**  
20 **USING THE DCF MODEL MORE RELIABLE ?**

21 A. Yes. The estimates of growth from the DCF model depend on analysts' forecasts.  
22 It is possible for utility growth rates to be distorted by short-term trends in the  
23 industry or the industry falling into favor or disfavor by analysts. The result of  
24 such distortions would be to bias the DCF estimates for utilities. For example,

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<sup>22</sup> *Federal Power Comm'n v. Hope Natural Gas Co.* (320 U.S. 391, 1944).

1 Value Line recently observed that near-term growth rates understate the longer-  
2 term expectations for gas utilities:

3 Natural Gas Utility stocks have fallen near the bottom of our  
4 Industry spectrum for Timeliness. Accordingly, short-term  
5 investors would probably do best to find a group with better  
6 prospects over the coming six to 12 months. Longer-term, we  
7 expect these businesses to rebound. An improved economic  
8 environment, coupled with stronger pricing, should boost results  
9 across this sector over the coming years.<sup>23</sup>

10 Because the Non-Utility Proxy Group includes low risk companies from many  
11 industries, it diversifies away any distortion that may be caused by the ebb and  
12 flow of enthusiasm for a particular sector.

13 **Q. WHAT CRITERIA DID YOU APPLY TO DEVELOP THE NON-UTILITY**  
14 **PROXY GROUP?**

15 A. My comparable risk proxy group was composed of those U.S. companies  
16 followed by Value Line that: 1) pay common dividends; 2) have a Safety Rank of  
17 "1"; 3) have a Financial Strength Rating of "B++" or greater; 4) have a beta of  
18 0.85 or less; and, 5) have an investment grade corporate credit rating from S&P.

19 **Q. DO THESE CRITERIA PROVIDE OBJECTIVE EVIDENCE TO**  
20 **EVALUATE INVESTORS' RISK PERCEPTIONS?**

21 A. Yes. Credit ratings are assigned by independent rating agencies for the purpose of  
22 providing investors with a broad assessment of the creditworthiness of a firm.  
23 Ratings generally extend from triple-A (the highest) to D (in default). Other  
24 symbols (*e.g.*, "A+") are used to show relative standing within a category.  
25 Because the rating agencies' evaluation includes virtually all of the factors  
26 normally considered important in assessing a firm's relative credit standing,  
27 corporate credit ratings provide a broad, objective measure of overall investment

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<sup>23</sup> The Value Line Investment Survey at 445 (Mar. 12, 2010).

1 risk that is readily available to investors. Widely cited in the investment  
2 community and referenced by investors, credit ratings are also frequently used as  
3 a primary risk indicator in establishing proxy groups to estimate the cost of  
4 common equity.

5 While credit ratings provide the most widely referenced benchmark for  
6 investment risks, other quality rankings published by investment advisory services  
7 also provide relative assessments of risks that are considered by investors in  
8 forming their expectations for common stocks. Value Line's primary risk  
9 indicator is its Safety Rank, which ranges from "1" (Safest) to "5" (Riskiest).  
10 This overall risk measure is intended to capture the total risk of a stock, and  
11 incorporates elements of stock price stability and financial strength. Given that  
12 Value Line is perhaps the most widely available source of investment advisory  
13 information, its Safety Rank provides useful guidance regarding the risk  
14 perceptions of investors.

15 The Financial Strength Rating is designed as a guide to overall financial  
16 strength and creditworthiness, with the key inputs including financial leverage,  
17 business volatility measures, and company size. Value Line's Financial Strength  
18 Ratings range from "A++" (strongest) down to "C" (weakest) in nine steps.  
19 Finally, Value Line's beta measures the volatility of a security's price relative to  
20 the market as a whole. A stock that tends to respond less to market movements  
21 has a beta less than 1.00, while stocks that tend to move more than the market  
22 have betas greater than 1.00.

23 **Q. HOW DO THE OVERALL RISKS OF YOUR PROXY GROUPS**  
24 **COMPARE WITH THE COMPANY?**

25 A. Table WEA-2 compares the Utility Proxy Group with the Non-Utility Proxy  
26 Group and AEP Ohio across four key indicators of investment risk. Because the

Company has no publicly traded common stock, the Value Line risk measures shown reflect those published for its parent, AEP:

**TABLE WEA-2  
COMPARISON OF RISK INDICATORS**

|                         | <b>S&amp;P<br/>Credit<br/>Rating</b> | <b>Value Line</b>      |                               |             |
|-------------------------|--------------------------------------|------------------------|-------------------------------|-------------|
|                         |                                      | <b>Safety<br/>Rank</b> | <b>Financial<br/>Strength</b> | <b>Beta</b> |
| Utility Group           | BBB                                  | 3                      | B++                           | 0.74        |
| Non-Utility Proxy Group | A                                    | 1                      | A+                            | 0.70        |
| AEP Ohio                | BBB                                  | 3                      | B++                           | 0.70        |

**Q. DOES THIS COMPARISON INDICATE THAT INVESTORS WOULD VIEW THE FIRMS IN YOUR PROXY GROUPS AS RISK-COMPARABLE TO AEP OHIO?**

**A.** Yes. As discussed earlier, AEP Ohio, like its parent, AEP, is rated "BBB" by S&P, which is identical to the average corporate credit rating for the utilities in the Utility Proxy Group. Similarly, the average Safety Rank and Financial Strength Rating for the Utility Proxy group is the same as that assigned to AEP, while AEP's beta value is only marginally lower than the average for the proxy group of other utilities. Considered together, a comparison of these objective measures, which consider a broad spectrum of risks, including financial and business position, and exposure to company specific factors, indicates that investors would likely conclude that the overall investment risks for AEP Ohio are comparable to those of the firms in the Utility Proxy Group.

With respect to the Non-Utility Proxy Group, its average credit ratings, Safety Rank, and Financial Strength Rating suggest less risk than for AEP Ohio, with its 0.70 average beta indicating identical risk. While the impact of differences in regulation is reflected in objective risk measures, my analyses conservatively focus on a lower-risk group of non-utility firms.

### C. Discounted Cash Flow Analyses

1 Q. HOW IS THE DCF MODEL USED TO ESTIMATE THE COST OF  
2 COMMON EQUITY?

3 A. DCF models attempt to replicate the market valuation process that sets the price  
4 investors are willing to pay for a share of a company's stock. The model rests on  
5 the assumption that investors evaluate the risks and expected rates of return from  
6 all securities in the capital markets. Given these expectations, the price of each  
7 stock is adjusted by the market until investors are adequately compensated for the  
8 risks they bear. Therefore, we can look to the market to determine what investors  
9 believe a share of common stock is worth. By estimating the cash flows investors  
10 expect to receive from the stock in the way of future dividends and capital gains,  
11 we can calculate their required rate of return. That is, the cost of equity is the  
12 discount rate that equates the current price of a share of stock with the present  
13 value of all expected cash flows from the stock. The general form of the DCF  
14 model is expressed as follows:

$$15 \quad P_0 = \frac{D_1}{(1+k_e)^1} + \frac{D_2}{(1+k_e)^2} + \dots + \frac{D_t}{(1+k_e)^t} + \frac{P_t}{(1+k_e)^t}$$

16 where:  $P_0$  = Current price per share;  
17  $P_t$  = Expected future price per share in period t;  
18  $D_t$  = Expected dividend per share in period t;  
19  $k_e$  = Cost of common equity.



1    **Q.    WHAT FORM OF THE DCF MODEL IS CUSTOMARILY USED TO**  
2    **ESTIMATE THE COST OF COMMON EQUITY IN RATE CASES?**

3    A.    Rather than developing annual estimates of cash flows into perpetuity, the DCF  
4    model can be simplified to a “constant growth” form:<sup>24</sup>

$$P_0 = \frac{D_1}{k_e - g}$$

6    where: g = Investors’ long-term growth expectations.

7    The cost of common equity ( $k_e$ ) can be isolated by rearranging terms within the  
8    equation:

$$k_e = \frac{D_1}{P_0} + g$$

10    This constant growth form of the DCF model recognizes that the rate of return to  
11    stockholders consists of two parts: 1) dividend yield ( $D_1/P_0$ ); and, 2) growth ( $g$ ).

12    In other words, investors expect to receive a portion of their total return in the  
13    form of current dividends and the remainder through price appreciation.

14    **Q.    WHAT FORM OF THE DCF MODEL DID YOU USE?**

15    A.    I applied the constant growth DCF model to estimate the cost of common equity  
16    for the Company, which is the form of the model most commonly relied on to  
17    establish the cost of common equity for traditional regulated utilities and the  
18    method most often referenced by regulators.

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<sup>24</sup> The constant growth DCF model is dependent on a number of strict assumptions, which in practice are never met. These include a constant growth rate for both dividends and earnings; a stable dividend payout ratio; the discount rate exceeds the growth rate; a constant growth rate for book value and price; a constant earned rate of return on book value; no sales of stock at a price above or below book value; a constant price-earnings ratio; a constant discount rate (*i.e.*, no changes in risk or interest rate levels and a flat yield curve); and all of the above extend to infinity.

1    **Q.    HOW IS THE CONSTANT GROWTH FORM OF THE DCF MODEL**  
2       **TYPICALLY USED TO ESTIMATE THE COST OF COMMON EQUITY?**

3    A.    The first step in implementing the constant growth DCF model is to determine the  
4       expected dividend yield ( $D_1/P_0$ ) for the firm in question. This is usually  
5       calculated based on an estimate of dividends to be paid in the coming year divided  
6       by the current price of the stock. The second, and more controversial, step is to  
7       estimate investors' long-term growth expectations ( $g$ ) for the firm. The final step  
8       is to sum the firm's dividend yield and estimated growth rate to arrive at an  
9       estimate of its cost of common equity.

10   **Q.    HOW WAS THE DIVIDEND YIELD FOR THE UTILITY PROXY GROUP**  
11       **DETERMINED?**

12   A.    Estimates of dividends to be paid by each of these utilities over the next twelve  
13       months, obtained from Value Line, served as  $D_1$ . This annual dividend was then  
14       divided by the corresponding stock price for each utility to arrive at the expected  
15       dividend yield. The expected dividends, stock prices, and resulting dividend  
16       yields for the firms in the utility proxy group are presented on Exhibit WEA-2.  
17       As shown there, dividend yields for the firms in the Utility Proxy Group ranged  
18       from 3.0 percent to 5.6 percent.

19   **Q.    WHAT IS THE NEXT STEP IN APPLYING THE CONSTANT GROWTH**  
20       **DCF MODEL?**

21   A.    The next step is to evaluate long-term growth expectations, or " $g$ ", for the firm in  
22       question. In constant growth DCF theory, earnings, dividends, book value, and  
23       market price are all assumed to grow in lockstep, and the growth horizon of the  
24       DCF model is infinite. But implementation of the DCF model is more than just a  
25       theoretical exercise; it is an attempt to replicate the mechanism investors used to  
26       arrive at observable stock prices. A wide variety of techniques can be used to

1       derive growth rates, but the only “g” that matters in applying the DCF model is  
2       the value that investors expect.

3       **Q.    ARE HISTORICAL GROWTH RATES LIKELY TO BE**  
4       **REPRESENTATIVE OF INVESTORS’ EXPECTATIONS FOR**  
5       **UTILITIES?**

6       A.   No. If past trends in earnings, dividends, and book value are to be representative  
7       of investors’ expectations for the future, then the historical conditions giving rise  
8       to these growth rates should be expected to continue. That is clearly not the case  
9       for utilities, where structural and industry changes have led to declining  
10      dividends, earnings pressure, and, in many cases, significant write-offs. While  
11      these conditions serve to depress historical growth measures, they are not  
12      representative of long-term expectations for the utility industry or the expectations  
13      that investors have incorporated into current market prices. As a result, historical  
14      growth measures for utilities do not currently meet the requirements of the DCF  
15      model.

16      **Q.    WHAT ARE INVESTORS MOST LIKELY TO CONSIDER IN**  
17      **DEVELOPING THEIR LONG-TERM GROWTH EXPECTATIONS?**

18      A.   While the DCF model is technically concerned with growth in dividend cash  
19      flows, implementation of this DCF model is solely concerned with replicating the  
20      forward-looking evaluation of real-world investors. In the case of utilities,  
21      dividend growth rates are not likely to provide a meaningful guide to investors’  
22      current growth expectations. This is because utilities have significantly altered  
23      their dividend policies in response to more accentuated business risks in the  
24      industry, with the payout ratio for electric utilities falling from approximately 80  
25      percent historically to on the order of 60 percent.<sup>25</sup> As a result of this trend

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<sup>25</sup> The Value Line Investment Survey (Sep. 15, 1995 at 161, Feb. 4, 2011 at 2237).

1 towards a more conservative payout ratio, dividend growth in the utility industry  
2 has remained largely stagnant as utilities conserve financial resources to provide a  
3 hedge against heightened uncertainties.

4 As payout ratios for firms in the utility industry trended downward,  
5 investors' focus has increasingly shifted from dividends to earnings as a measure  
6 of long-term growth. Future trends in earnings, which provide the source for  
7 future dividends and ultimately support share prices, play a pivotal role in  
8 determining investors' long-term growth expectations. The importance of  
9 earnings in evaluating investors' expectations and requirements is well accepted  
10 in the investment community. As noted in *Finding Reality in Reported Earnings*  
11 published by the Association for Investment Management and Research:

12 [E]arnings, presumably, are the basis for the investment benefits that  
13 we all seek. "Healthy earnings equal healthy investment benefits"  
14 seems a logical equation, but earnings are also a scorecard by which  
15 we compare companies, a filter through which we assess  
16 management, and a crystal ball in which we try to foretell future  
17 performance.<sup>26</sup>

18 Value Line's near-term projections and its Timeliness Rank, which is the principal  
19 investment rating assigned to each individual stock, are also based primarily on  
20 various quantitative analyses of earnings. As Value Line explained:

21 The future earnings rank accounts for 65% in the determination of  
22 relative price change in the future; the other two variables (current  
23 earnings rank and current price rank) explain 35%.<sup>27</sup>

24 The fact that investment advisory services focus primarily on growth in  
25 earnings indicates that the investment community regards this as a superior  
26 indicator of future long-term growth. Indeed, "A Study of Financial Analysts:

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<sup>26</sup> Association for Investment Management and Research, "Finding Reality in Reported Earnings: An Overview" at 1 (Dec. 4, 1996).

<sup>27</sup> The Value Line Investment Survey, *Subscriber's Guide* at 53.

1 Practice and Theory,” published in the *Financial Analysts Journal*, reported the  
2 results of a survey conducted to determine what analytical techniques investment  
3 analysts actually use.<sup>28</sup> Respondents were asked to rank the relative importance  
4 of earnings, dividends, cash flow, and book value in analyzing securities. Of the  
5 297 analysts that responded, only 3 ranked dividends first while 276 ranked it last.

6 The article concluded:

7 Earnings and cash flow are considered far more important than book  
8 value and dividends.<sup>29</sup>

9 In 2007, the *Financial Analysts Journal* reported the results of a study of the  
10 relationship between valuations based on alternative multiples and actual market  
11 prices, which concluded, “In all cases studied, earnings dominated operating cash  
12 flows and dividends.”<sup>30</sup>

13 **Q. DO THE GROWTH RATE PROJECTIONS OF SECURITY ANALYSTS**  
14 **CONSIDER HISTORICAL TRENDS?**

15 **A.** Yes. Professional security analysts study historical trends extensively in  
16 developing their projections of future earnings. Hence, to the extent there is any  
17 useful information in historical patterns, that information is incorporated into  
18 analysts’ growth forecasts.

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<sup>28</sup> Block, Stanley B., “A Study of Financial Analysts: Practice and Theory”, *Financial Analysts Journal* (July/August 1999).

<sup>29</sup> *Id.* at 88.

<sup>30</sup> Liu, Jing, Nissim, Doron, & Thomas, Jacob, “Is Cash Flow King in Valuations?,” *Financial Analysts Journal*, Vol. 63, No. 2 at 56 (March/April 2007).

1   **Q.   WHAT ARE SECURITY ANALYSTS CURRENTLY PROJECTING IN**  
2       **THE WAY OF GROWTH FOR THE FIRMS IN THE UTILITY PROXY**  
3       **GROUP?**

4   A.   The earnings growth projections for each of the firms in the Utility Proxy Group  
5       reported by Value Line, Thomson Reuters ("IBES"), and Zacks Investment  
6       Research ("Zacks") are displayed on Exhibit WEA-2.<sup>31</sup>

7   **Q.   SOME ARGUE THAT ANALYSTS' ASSESSMENTS OF GROWTH RATES**  
8       **ARE BIASED. DO YOU BELIEVE THESE PROJECTIONS ARE**  
9       **INAPPROPRIATE FOR ESTIMATING INVESTORS' REQUIRED**  
10      **RETURN USING THE DCF MODEL?**

11 A.   No. In applying the DCF model to estimate the cost of common equity, the only  
12      relevant growth rate is the forward-looking expectations of investors that are  
13      captured in current stock prices. Investors, just like securities analysts and others  
14      in the investment community, do not know how the future will actually turn out.  
15      They can only make investment decisions based on their best estimate of what the  
16      future holds in the way of long-term growth for a particular stock, and securities  
17      prices are constantly adjusting to reflect their assessment of available information.

18           Any claims that analysts' estimates are not relied upon by investors are  
19      illogical given the reality of a competitive market for investment advice. If  
20      financial analysts' forecasts do not add value to investors' decision making, then it  
21      is irrational for investors to pay for these estimates. Similarly, those financial  
22      analysts who fail to provide reliable forecasts will lose out in competitive markets  
23      relative to those analysts whose forecasts investors find more credible. The  
24      reality that analyst estimates are routinely referenced in the financial media and in

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<sup>31</sup> Formerly I/B/E/S International, Inc., IBES growth rates are now compiled and published by Thomson Reuters.

1 investment advisory publications (e.g., Value Line) implies that investors use  
2 them as a basis for their expectations.

3 The continued success of investment services such as Thompson Reuters  
4 and Value Line, and the fact that projected growth rates from such sources are  
5 widely referenced, provides strong evidence that investors give considerable  
6 weight to analysts' earnings projections in forming their expectations for future  
7 growth. While the projections of securities analysts may be proven optimistic or  
8 pessimistic in hindsight, this is irrelevant in assessing the expected growth that  
9 investors have incorporated into current stock prices, and any bias in analysts'  
10 forecasts – whether pessimistic or optimistic – is irrelevant if investors share  
11 analysts' views. Earnings growth projections of security analysts provide the  
12 most frequently referenced guide to investors' views and are widely accepted in  
13 applying the DCF model. As explained in *New Regulatory Finance*:

14 Because of the dominance of institutional investors and their  
15 influence on individual investors, analysts' forecasts of long-run  
16 growth rates provide a sound basis for estimating required returns.  
17 Financial analysts exert a strong influence on the expectations of  
18 many investors who do not possess the resources to make their  
19 own forecasts, that is, they are a cause of *g* [growth]. The accuracy  
20 of these forecasts in the sense of whether they turn out to be  
21 correct is not an issue here, as long as they reflect widely held  
22 expectations.<sup>32</sup>

23 **Q. HOW ELSE ARE INVESTORS' EXPECTATIONS OF FUTURE LONG-**  
24 **TERM GROWTH PROSPECTS OFTEN ESTIMATED WHEN APPLYING**  
25 **THE CONSTANT GROWTH DCF MODEL?**

26 **A.** In constant growth theory, growth in book equity will be equal to the product of  
27 the earnings retention ratio (one minus the dividend payout ratio) and the earned  
28 rate of return on book equity. Furthermore, if the earned rate of return and the

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<sup>32</sup> Morin, Roger A., "New Regulatory Finance," *Public Utilities Reports, Inc.* at 298 (2006).

1 payout ratio are constant over time, growth in earnings and dividends will be  
2 equal to growth in book value. Despite the fact that these conditions are never  
3 met in practice, this "sustainable growth" approach may provide a rough guide for  
4 evaluating a firm's growth prospects and is frequently proposed in regulatory  
5 proceedings.

6 The sustainable growth rate is calculated by the formula,  $g = br + sv$ , where  
7 "b" is the expected retention ratio, "r" is the expected earned return on equity, "s"  
8 is the percent of common equity expected to be issued annually as new common  
9 stock, and "v" is the equity accretion rate.

10 **Q. WHAT IS THE PURPOSE OF THE "SV" TERM?**

11 A. Under DCF theory, the "sv" factor is a component of the growth rate designed to  
12 capture the impact of issuing new common stock at a price above, or below, book  
13 value. When a company's stock price is greater than its book value per share, the  
14 per-share contribution in excess of book value associated with new stock issues  
15 will accrue to the current shareholders. This increase to the book value of existing  
16 shareholders leads to higher expected earnings and dividends, with the "sv" factor  
17 incorporating this additional growth component.

18 **Q. WHAT GROWTH RATE DOES THE EARNINGS RETENTION METHOD**  
19 **SUGGEST FOR THE UTILITY PROXY GROUP?**

20 A. The sustainable, "br+sv" growth rates for each firm in the Utility Proxy Group are  
21 summarized on Exhibit WEA-2, with the underlying details being presented on  
22 Exhibit WEA-3. For each firm, the expected retention ratio (b) was calculated  
23 based on Value Line's projected dividends and earnings per share. Likewise, each  
24 firm's expected earned rate of return (r) was computed by dividing projected  
25 earnings per share by projected net book value. Because Value Line reports end-  
26 of-year book values, an adjustment factor was incorporated to compute an average



1 rate of return over the year, consistent with the theory underlying this approach to  
2 estimating investors' growth expectations. Meanwhile, the percent of common  
3 equity expected to be issued annually as new common stock (s) was equal to the  
4 product of the projected market-to-book ratio and growth in common shares  
5 outstanding, while the equity accretion rate (v) was computed as 1 minus the  
6 inverse of the projected market-to-book ratio.

7 **Q. WHAT COST OF COMMON EQUITY ESTIMATES WERE IMPLIED**  
8 **FOR THE UTILITY PROXY GROUP USING THE DCF MODEL?**

9 A. After combining the dividend yields and respective growth projections for each  
10 utility, the resulting cost of common equity estimates are shown on Exhibit  
11 WEA-2.

12 **Q. IN EVALUATING THE RESULTS OF THE CONSTANT GROWTH DCF**  
13 **MODEL, IS IT APPROPRIATE TO ELIMINATE ESTIMATES THAT ARE**  
14 **EXTREME LOW OR HIGH OUTLIERS?**

15 A. Yes. In applying quantitative methods to estimate the cost of equity, it is essential  
16 that the resulting values pass fundamental tests of reasonableness and economic  
17 logic. Accordingly, DCF estimates that are implausibly low or high should be  
18 eliminated when evaluating the results of this method.

19 **Q. HOW DID YOU EVALUATE DCF ESTIMATES AT THE LOW END OF**  
20 **THE RANGE?**

21 A. It is a basic economic principle that investors can be induced to hold more risky  
22 assets only if they expect to earn a return to compensate them for their risk  
23 bearing. As a result, the rate of return that investors require from a utility's  
24 common stock, the most junior and riskiest of its securities, must be considerably  
25 higher than the yield offered by senior, long-term debt. Consistent with this  
26 principle, the DCF results must be adjusted to eliminate estimates that are

1 determined to be extreme low outliers when compared against the yields available  
2 to investors from less risky utility bonds.

3 **Q. WHAT DOES THIS TEST OF LOGIC IMPLY WITH RESPECT TO THE**  
4 **DCF RESULTS FOR THE UTILITY PROXY GROUP?**

5 A. As noted earlier, the average S&P corporate credit rating for the Utility proxy  
6 Group is "BBB", which is identical to AEP Ohio. Companies rated "BBB-",  
7 "BBB", and "BBB+" are all considered part of the triple-B rating category, with  
8 Moody's monthly yields on triple-B bonds averaging approximately 6.1 percent in  
9 January 2011.<sup>33</sup> It is inconceivable that investors are not requiring a substantially  
10 higher rate of return for holding common stock. Consistent with this principle,  
11 the DCF results for the Utility Proxy Group must be adjusted to eliminate  
12 estimates that are determined to be extreme low outliers when compared against  
13 the yields available to investors from less risky utility bonds.

14 **Q. HAVE SIMILAR TESTS BEEN APPLIED BY REGULATORS?**

15 A. Yes. FERC has noted that adjustments are justified where applications of the  
16 DCF approach produce illogical results. FERC evaluates DCF results against  
17 observable yields on long-term public utility debt and has recognized that it is  
18 appropriate to eliminate estimates that do not sufficiently exceed this threshold.  
19 In a 2002 opinion establishing its current precedent for determining ROEs for  
20 electric utilities, for example, FERC noted:

21 An adjustment to this data is appropriate in the case of PG&E's  
22 low-end return of 8.42 percent, which is comparable to the average  
23 Moody's "A" grade public utility bond yield of 8.06 percent, for  
24 October 1999. Because investors cannot be expected to purchase  
25 stock if debt, which has less risk than stock, yields essentially the

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<sup>33</sup> Moody's Investors Service, [www.credittrends.com](http://www.credittrends.com).

1 same return, this low-end return cannot be considered reliable in  
2 this case.<sup>34</sup>

3 Similarly, in its August 2006 decision in *Kern River Gas Transmission Company*,  
4 FERC noted that:

5 [T]he 7.31 and 7.32 percent costs of equity for El Paso and  
6 Williams found by the ALJ are only 110 and 122 basis points  
7 above that average yield for public utility debt.<sup>35</sup>

8 The Commission upheld the opinion of Staff and the Administrative Law Judge  
9 that cost of equity estimates for these two proxy group companies “were too low  
10 to be credible.”<sup>36</sup>

11 The practice of eliminating low-end outliers has been affirmed in  
12 numerous FERC proceedings,<sup>37</sup> and in its April 15, 2010 decision in *SoCal*  
13 *Edison*, FERC affirmed that, “it is reasonable to exclude any company whose  
14 low-end ROE fails to exceed the average bond yield by about 100 basis points or  
15 more.”<sup>38</sup>

16 **Q. WHAT ELSE SHOULD BE CONSIDERED IN EVALUATING DCF**  
17 **ESTIMATES AT THE LOW END OF THE RANGE?**

18 A. As indicated earlier, while corporate bond yields have declined substantially as  
19 the worst of the financial crisis has abated, it is generally expected that long-term  
20 interest rates will rise as the recession ends and the economy returns to a more  
21 normal pattern of growth. As shown in Table WEA-3 below, forecasts of IHS  
22 Global Insight and the EIA imply an average triple-B bond yield of 7.15 percent  
23 over the period 2012-2015:

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<sup>34</sup> *Southern California Edison Company*, 92 FERC ¶ 61,070 at p. 22 (2000).

<sup>35</sup> *Kern River Gas Transmission Company*, Opinion No. 486, 117 FERC ¶ 61,077 at P 140 & n. 227 (2006).

<sup>36</sup> *Id.*

<sup>37</sup> See, e.g., *Virginia Electric Power Co.*, 123 FERC ¶ 61,098 at P 64 (2008).

<sup>38</sup> *Southern California Edison Co.*, 131 FERC ¶ 61,020 at P 55 (2010) (“*SoCal Edison*”).

**TABLE WEA-3  
IMPLIED BBB BOND YIELD**

|                                       | <u><b>2012-15</b></u> |
|---------------------------------------|-----------------------|
| Projected AA Utility Yield            |                       |
| IHS Global Insight (a)                | 6.20%                 |
| EIA (b)                               | <u>6.58%</u>          |
| Average                               | 6.39%                 |
| BBB - AA Yield Spread (c)             | <u>0.76%</u>          |
| <b>Implied Triple-B Utility Yield</b> | <b>7.15%</b>          |

(a) IHS Global Insight, *U.S. Economic Outlook* at 19 (September 2010).

(b) Energy Information Administration, *Annual Energy Outlook 2011* Early Release (Dec. 16, 2010).

(c) Based on monthly average bond yields for the six-month period August 2010 - January 2011.

The increase in debt yields anticipated by IHS Global Insight and EIA is also supported by the widely-referenced Blue Chip Financial Forecasts, which projects that yields on corporate bonds will climb on the order of 130 basis points through the period 2012-2016.<sup>39</sup>

**Q. WHAT DOES THIS TEST OF LOGIC IMPLY WITH RESPECT TO THE DCF RESULTS FOR THE UTILITY PROXY GROUP?**

A. As shown on Exhibit WEA-2, fifteen low-end DCF estimates ranged from 1.9 percent to 7.3 percent. Nine of these values were essentially at or below current utility bond yields, with a cost of equity estimate of 7.3 percent being barely above the yield on triple-B utility bonds expected during the period 2012-2015. In light of the risk-return tradeoff principle and the test applied in *SoCal Edison*, it is inconceivable that investors are not requiring a substantially higher rate of return for holding common stock, which is the riskiest of a utility's securities. As

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<sup>39</sup> *Blue Chip Financial Forecasts*, Vol. 29, No. 12 (Dec. 1, 2010).

1 a result, consistent with the test of economic logic applied by FERC and the  
2 upward trend expected for utility bond yields, these values provide little guidance  
3 as to the returns investors require from utility common stocks and should be  
4 excluded.

5 **Q. WHAT COST OF COMMON EQUITY ESTIMATES ARE IMPLIED BY**  
6 **YOUR DCF RESULTS FOR THE UTILITY PROXY GROUP?**

7 A. As shown on Exhibit WEA-2 and summarized in Table WEA-4, below, after  
8 eliminating illogical values, application of the constant growth DCF model  
9 resulted in average cost of common equity estimates ranging from 9.7 percent to  
10 10.9 percent:

11 **TABLE WEA-4**  
12 **DCF RESULTS – UTILITY PROXY GROUP**

| <u>Growth Rate</u> | <u>Average Cost of Equity</u> |
|--------------------|-------------------------------|
| Value Line         | 10.9%                         |
| IBES               | 10.8%                         |
| Zacks              | 10.8%                         |
| br+sv              | 9.7%                          |

13 **Q. WHAT WERE THE RESULTS OF YOUR DCF ANALYSIS FOR THE**  
14 **NON-UTILITY PROXY GROUP?**

15 A. The results of my constant growth DCF analysis for the Non-Utility Proxy Group,  
16 which mirror those for the proxy group of utilities, are presented in Exhibit  
17 WEA-4. I noted earlier that values that are implausibly low or high should be  
18 eliminated when evaluating the results of any quantitative method used to  
19 estimate the cost of equity. As highlighted on Exhibit WEA-4, in addition to  
20 illogical low-end values, various DCF estimates for the firms in the Non-Utility  
21 Proxy Group exceeded 17.0 percent. I determined that, when compared with the  
22 balance of the remaining estimates, these values could be considered implausible  
23 and should be excluded. This is also consistent with the precedent adopted by

1 FERC, which has established that estimates found to be “extreme outliers” should  
2 be disregarded in interpreting the results of the DCF model.<sup>40</sup>

3 As shown on Exhibit WEA-4 and summarized in Table WEA-5, below,  
4 after eliminating illogical low- and high-end values, application of the constant  
5 growth DCF model resulted in cost of common equity estimates on the order of at  
6 least 12 percent:

7 **TABLE WEA-5**  
8 **DCF RESULTS – NON-UTILITY GROUP**

| <u>Growth Rate</u> | <u>Average Cost of Equity</u> |
|--------------------|-------------------------------|
| Value Line         | 12.0%                         |
| IBES               | 12.4%                         |
| Zacks              | 12.5%                         |
| br+sv              | 12.1%                         |

9 As discussed earlier, reference to the Non-Utility Proxy Group is consistent with  
10 established regulatory principles. Required returns for utilities should be in line  
11 with those of non-utility firms of comparable risk operating under the constraints  
12 of free competition.

#### **D. Capital Asset Pricing Model**

13 **Q. PLEASE DESCRIBE THE CAPM.**

14 **A.** The CAPM is a theory of market equilibrium that measures risk using the beta  
15 coefficient. Assuming investors are fully diversified, the relevant risk of an  
16 individual asset (e.g., common stock) is its volatility relative to the market as a  
17 whole, with beta reflecting the tendency of a stock’s price to follow changes in the  
18 market. The CAPM is mathematically expressed as:

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<sup>40</sup> See, e.g., *Bangor Hydro-Electric Co.*, 109 FERC ¶ 61,147 at P 205 (2004).

1 
$$R_j = R_f + \beta_j(R_m - R_f)$$

2 where:  $R_j$  = required rate of return for stock j;  
3  $R_f$  = risk-free rate;  
4  $R_m$  = expected return on the market portfolio; and,  
5  $\beta_j$  = beta, or systematic risk, for stock j.

6 Like the DCF model, the CAPM is an *ex-ante*, or forward-looking model based  
7 on expectations of the future. As a result, in order to produce a meaningful  
8 estimate of investors' required rate of return, the CAPM must be applied using  
9 estimates that reflect the expectations of actual investors in the market, not with  
10 backward-looking, historical data.

11 **Q. HOW DID YOU APPLY THE CAPM TO ESTIMATE THE COST OF**  
12 **COMMON EQUITY?**

13 A. Application of the CAPM to the Utility Proxy Group based on a forward-looking  
14 estimate for investors' required rate of return from common stocks is presented on  
15 Exhibit WEA-6. In order to capture the expectations of today's investors in  
16 current capital markets, the expected market rate of return was estimated by  
17 conducting a DCF analysis on the dividend paying firms in the S&P 500.

18 The dividend yield for each firm was calculated based on the annual  
19 indicated dividend payment obtained from Value Line, increased by one-years'  
20 growth using the rate discussed subsequently  $(1 + g)$  to convert them to year-  
21 ahead dividend yields presumed by the constant growth DCF model. The growth  
22 rate was equal to the consensus earnings growth projections for each firm  
23 published by IBES, with each firm's dividend yield and growth rate being  
24 weighted by its proportionate share of total market value. Based on the weighted  
25 average of the projections for the 354 individual firms, current estimates imply an  
26 average growth rate over the next five years of 10.6 percent. Combining this  
27 average growth rate with a year-ahead dividend yield of 2.5 percent results in a  
28 current cost of common equity estimate for the market as a whole ( $R_m$ ) of

1 approximately 13.1 percent. Subtracting a 4.5 percent risk-free rate based on the  
2 average yield on 30-year Treasury bonds produced a market equity risk premium  
3 of 8.6 percent.

4 **Q. WHAT WAS THE SOURCE OF THE BETA VALUES YOU USED TO**  
5 **APPLY THE CAPM?**

6 A. I relied on the beta values reported by Value Line, which in my experience is the  
7 most widely referenced source for beta in regulatory proceedings. As noted in  
8 *New Regulatory Finance*:

9 Value Line is the largest and most widely circulated independent  
10 investment advisory service, and influences the expectations of a  
11 large number of institutional and individual investors. ... Value  
12 Line betas are computed on a theoretically sound basis using a  
13 broadly based market index, and they are adjusted for the  
14 regression tendency of betas to converge to 1.00.<sup>41</sup>

15 **Q. WHAT ELSE SHOULD BE CONSIDERED IN APPLYING THE CAPM?**

16 A. As explained by *Morningstar*:

17 One of the most remarkable discoveries of modern finance is that  
18 of a relationship between firm size and return. The relationship  
19 cuts across the entire size spectrum but is most evident among  
20 smaller companies, which have higher returns on average than  
21 larger ones.<sup>42</sup>

22 Because empirical research indicates that the CAPM does not fully account for  
23 observed differences in rates of return attributable to firm size, a modification is  
24 required to account for this size effect.

25 According to the CAPM, the expected return on a security should consist  
26 of the riskless rate, plus a premium to compensate for the systematic risk of the  
27 particular security. The degree of systematic risk is represented by the beta

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<sup>41</sup> Morin, Roger A., "New Regulatory Finance," *Public Utilities Reports* at 71 (2006).

<sup>42</sup> *Morningstar*, "Ibbotson SBBI 2010 Valuation Yearbook," at p. 85 (footnote omitted).



1 coefficient. The need for the size adjustment arises because differences in  
2 investors' required rates of return that are related to firm size are not fully  
3 captured by beta. To account for this, Morningstar has developed size premiums  
4 that need to be added to the theoretical CAPM cost of equity estimates to account  
5 for the level of a firm's market capitalization in determining the CAPM cost of  
6 equity.<sup>43</sup> Accordingly, my CAPM analyses incorporated an adjustment to  
7 recognize the impact of size distinctions, as measured by the average market  
8 capitalization for the respective proxy groups.

9 **Q. WHAT COST OF EQUITY ESTIMATE WAS INDICATED FOR THE**  
10 **UTILITY PROXY GROUP BASED ON THIS FORWARD-LOOKING**  
11 **APPLICATION OF THE CAPM?**

12 A. The average market capitalization of the Utility Proxy Group is \$8.2 billion.  
13 Based on data from *Morningstar*, this means that the theoretical CAPM cost of  
14 equity estimate must be increased by 74 basis points to account for the industry  
15 group's relative size. As shown on Exhibit WEA-6, adjusting the theoretical  
16 CAPM result to incorporate this size adjustment results in an average indicated  
17 cost of common equity of 11.6 percent.

18 **Q. WHAT COST OF COMMON EQUITY WAS INDICATED FOR THE NON-**  
19 **UTILITY PROXY GROUP BASED ON THIS FORWARD-LOOKING**  
20 **APPLICATION OF THE CAPM?**

21 A. As shown on Exhibit WEA-7, applying the forward-looking CAPM approach to  
22 the firms in the Non-Utility Proxy Group results in an average implied cost of  
23 common equity of 10.2 percent.

---

<sup>43</sup> *Id.* at Table C-1.

1   **Q.    SHOULD THE CAPM APPROACH BE APPLIED USING HISTORICAL**  
2       **RATES OF RETURN?**

3    A.   No. The CAPM cost of common equity estimate is calibrated from investors'  
4       required risk premium between Treasury bonds and common stocks. In response  
5       to heightened uncertainties, investors have repeatedly sought a safe haven in U.S.  
6       government bonds and this "flight to safety" has pushed Treasury yields  
7       significantly lower while yield spreads for corporate debt have widened. This  
8       distortion not only impacts the absolute level of the CAPM cost of equity  
9       estimate, but it affects estimated risk premiums. Economic logic would suggest  
10      that investors' required risk premium for common stocks over Treasury bonds has  
11      also increased.

12               Meanwhile, backward-looking approaches incorrectly assume that  
13      investors' assessment of the required risk premium between Treasury bonds and  
14      common stocks is constant, and equal to some historical average. At no time in  
15      recent history has the fallacy of this assumption been demonstrated more  
16      concretely. This incongruity between investors' current expectations and  
17      historical risk premiums is particularly relevant during periods of heightened  
18      uncertainty and rapidly changing capital market conditions, such as those  
19      experienced recently.<sup>44</sup>

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<sup>44</sup> FERC has previously rejected CAPM methodologies based on historical data because whatever historical relationships existed between debt and equity securities may no longer hold. *See Orange & Rockland Utils., Inc.*, 40 F.E.R.C. P63,053, at pp. 65,208 -09 (1987), *aff'd*, Opinion No. 314, 44 F.E.R.C. P61,253 at 65,208.

### **E. Expected Earnings Approach**

1   **Q.   WHAT OTHER ANALYSES DID YOU CONDUCT TO ESTIMATE THE**  
2   **COST OF COMMON EQUITY?**

3   A.   As I noted earlier, I also evaluated the cost of common equity using the expected  
4       earnings method. Reference to rates of return available from alternative  
5       investments of comparable risk can provide an important benchmark in assessing  
6       the return necessary to assure confidence in the financial integrity of a firm and its  
7       ability to attract capital. This expected earnings approach is consistent with the  
8       economic underpinnings for a fair rate of return established by the U.S. Supreme  
9       Court in *Bluefield* and *Hope*. Moreover, it avoids the complexities and limitations  
10      of capital market methods and instead focuses on the returns earned on book  
11      equity, which are readily available to investors.

12   **Q.   WHAT ECONOMIC PREMISE UNDERLIES THE EXPECTED**  
13   **EARNINGS APPROACH?**

14   A.   The simple, but powerful concept underlying the expected earnings approach is  
15       that investors compare each investment alternative with the next best opportunity.  
16       If the utility is unable to offer a return similar to that available from other  
17       opportunities of comparable risk, investors will become unwilling to supply the  
18       capital on reasonable terms. For existing investors, denying the utility an  
19       opportunity to earn what is available from other similar risk alternatives prevents  
20       them from earning their opportunity cost of capital. In this situation the  
21       government is effectively taking the value of investors' capital without adequate  
22       compensation.

1   **Q.   HOW IS THE COMPARISON OF OPPORTUNITY COSTS TYPICALLY**  
2   **IMPLEMENTED?**

3   A.   The traditional comparable earnings test identifies a group of companies that are  
4       believed to be comparable in risk to the utility. The actual earnings of those  
5       companies on the book value of their investment are then compared to the  
6       allowed return of the utility. While the traditional comparable earnings test is  
7       implemented using historical data taken from the accounting records, it is also  
8       common to use projections of returns on book investment, such as those published  
9       by recognized investment advisory publications (*e.g.*, Value Line). Because these  
10      returns on book value equity are analogous to the allowed return on a utility's rate  
11      base, this measure of opportunity costs results in a direct, "apples to apples"  
12      comparison.

13           Moreover, regulators do not set the returns that investors earn in the  
14      capital markets – they can only establish the allowed return on the value of a  
15      utility's investment, as reflected on its accounting records. As a result, the  
16      expected earnings approach provides a direct guide to ensure that the allowed  
17      ROE is similar to what other utilities of comparable risk will earn on invested  
18      capital. This opportunity cost test does not require theoretical models to  
19      indirectly infer investors' perceptions from stock prices or other market data. As  
20      long as the proxy companies are similar in risk, their expected earned returns on  
21      invested capital provide a direct benchmark for investors' opportunity costs that is  
22      independent of fluctuating stock prices, market-to-book ratios, debates over DCF  
23      growth rates, or the limitations inherent in any theoretical model of investor  
24      behavior.

1   **Q.   WHAT RATES OF RETURN ON EQUITY ARE INDICATED FOR**  
2       **ELECTRIC UTILITIES BASED ON THE EXPECTED EARNINGS**  
3       **APPROACH?**

4    A.   Value Line reports that its analysts anticipate an average rate of return on common  
5       equity for the electric utility industry of 10.5 percent in 2011 and over its 2013-  
6       2015 forecast horizon.<sup>45</sup> Meanwhile, for the firms in the Utility Proxy Group  
7       specifically, the returns on common equity projected by Value Line over its  
8       forecast horizon are shown on Exhibit WEA-8. Consistent with the rationale  
9       underlying the development of the br+sv growth rates, these year-end values were  
10      converted to average returns using the same adjustment factor discussed earlier  
11      and developed on Exhibit WEA-3. As shown on Exhibit WEA-8, Value Line's  
12      projections for the Utility Proxy Group suggest an average ROE of 11.0 percent.

**F.   Flotation Costs**

13   **Q.   WHAT OTHER CONSIDERATIONS ARE RELEVANT IN SETTING THE**  
14       **RETURN ON EQUITY FOR A UTILITY?**

15   A.   The common equity used to finance the investment in utility assets is provided  
16       from either the sale of stock in the capital markets or from retained earnings not  
17       paid out as dividends. When equity is raised through the sale of common stock,  
18       there are costs associated with "floating" the new equity securities. These  
19       flotation costs include services such as legal, accounting, and printing, as well as  
20       the fees and discounts paid to compensate brokers for selling the stock to the  
21       public. Also, some argue that the "market pressure" from the additional supply of  
22       common stock and other market factors may further reduce the amount of funds a  
23       utility nets when it issues common equity.

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<sup>45</sup> The Value Line Investment Survey at 2237 (Feb. 4, 2011).

- 1   **Q.   IS THERE AN ESTABLISHED MECHANISM FOR A UTILITY TO**  
2   **RECOGNIZE EQUITY ISSUANCE COSTS?**
- 3   A.   No. While debt flotation costs are recorded on the books of the utility, amortized  
4       over the life of the issue, and thus increase the effective cost of debt capital, there  
5       is no similar accounting treatment to ensure that equity flotation costs are  
6       recorded and ultimately recognized. No rate of return is authorized on flotation  
7       costs necessarily incurred to obtain a portion of the equity capital used to finance  
8       plant. In other words, equity flotation costs are not included in a utility's rate base  
9       because neither that portion of the gross proceeds from the sale of common stock  
10      used to pay flotation costs is available to invest in plant and equipment, nor are  
11      flotation costs capitalized as an intangible asset. Unless some provision is made to  
12      recognize these issuance costs, a utility's revenue requirements will not fully reflect  
13      all of the costs incurred for the use of investors' funds. Because there is no  
14      accounting convention to accumulate the flotation costs associated with equity  
15      issues, they must be accounted for indirectly, with an upward adjustment to the  
16      cost of equity being the most logical mechanism.
- 17   **Q.   WHAT IS THE MAGNITUDE OF THE ADJUSTMENT TO THE "BARE**  
18   **BONES" COST OF EQUITY TO ACCOUNT FOR ISSUANCE COSTS?**
- 19   A.   There are any number of ways in which a flotation cost adjustment can be  
20       calculated, and the adjustment can range from just a few basis points to more than  
21       a full percent. One of the most common methods used to account for flotation  
22       costs in regulatory proceedings is to apply an average flotation-cost percentage to  
23       a utility's dividend yield. Based on a review of the finance literature, *New*  
24       *Regulatory Finance* concluded:

1           The flotation cost allowance requires an estimated adjustment to  
2           the return on equity of approximately 5% to 10%, depending on  
3           the size and risk of the issue.<sup>46</sup>

4           Alternatively, a study of data from Morgan Stanley regarding issuance costs  
5           associated with utility common stock issuances suggests an average flotation cost  
6           percentage of 3.6%,<sup>47</sup> with AEP incurring issuance costs equal to approximately  
7           3.02 percent of the gross proceeds from its 2009 public offering of common  
8           stock.<sup>48</sup> Applying this 3.02 percent expense percentage for AEP to a  
9           representative dividend yield of 5.0 percent implies a minimum flotation cost  
10          adjustment on the order of 15 basis points.

11   **Q.   HAS THE PUCO STAFF RECOGNIZED THAT FLOTATION COSTS ARE**  
12   **PROPERLY CONSIDERED IN ESTABLISHING A FAIR ROE?**

13   A.   Yes. For example, in Case No. 07-551-EL-AIR involving Cleveland Electric  
14          Illuminating Company, the Staff concluded, “allowance must be made for  
15          issuance and other costs” associated with raising common equity capital.<sup>49</sup> As  
16          shown on Exhibit WEA-9, applying the Staff’s issuance cost methodology to AEP  
17          results in a flotation cost adjustment factor of 1.02059.

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<sup>46</sup> Roger A. Morin, “New Regulatory Finance,” *Public Utilities Reports, Inc.* at 323 (1994).

<sup>47</sup> *Application of Yankee Gas Services Company for a Rate Increase*, DPUC Docket No. 04-06-01, Direct Testimony of George J. Eckenroth (Jul. 2, 2004) at Exhibit GJE-11.1. Updating the results presented by Mr. Eckenroth through April 2005 also resulted in an average flotation cost percentage of 3.6%.

<sup>48</sup> American Electric Power Company, Inc., *Prospectus Supplement (To Prospectus dated December 22, 2008)* (Apr. 1, 2009). Net proceeds from AEP’s sale of 69 million shares of common stock raised approximately \$1.64 billion of additional equity capital.

<sup>49</sup> *A report by the Staff of the Public Utilities Commission of Ohio*, Case No. 07-551-EL-AIR *et al.* at 17 and Schedule D-1.1 (Dec. 4, 2007).

#### IV. RETURN ON EQUITY FOR AEP OHIO

1 Q. WHAT IS THE PURPOSE OF THIS SECTION?

2 A. In addition to presenting my conclusions regarding a fair ROE for the Company,  
3 this section also discusses the relationship between ROE and preservation of a  
4 utility's financial integrity and the ability to attract capital. In addition, I evaluate  
5 the reasonableness of the Company's requested capital structure.

##### A. Summary of Quantitative Results

6 Q. PLEASE SUMMARIZE THE RESULTS OF YOUR QUANTITATIVE  
7 ANALYSES.

8 A. The cost of common equity estimates produced by the various capital market  
9 oriented analyses described in my testimony are summarized in Table WEA-6,  
10 below:

11 TABLE WEA-6  
12 SUMMARY OF QUANTITATIVE RESULTS

| <u>DCF</u>               | <u>Utility</u> | <u>Non-Utility</u> |
|--------------------------|----------------|--------------------|
| Earnings Growth          |                |                    |
| Value Line               | 10.9%          | 12.0%              |
| IBES                     | 10.8%          | 12.4%              |
| Zacks                    | 10.8%          | 12.5%              |
| br + sv                  | 9.7%           | 12.1%              |
| <u>CAPM</u>              | 11.6%          | 10.2%              |
| <u>Expected Earnings</u> |                |                    |
| Value Line 2013-15       | 10.5%          | --                 |
| Utility Proxy Group      | 11.0%          | --                 |
| <u>Average</u>           | 10.8%          | 11.8%              |

13 Based on my assessment of the relative strengths and weaknesses inherent in each  
14 method, and conservatively giving less emphasis to the upper- and lower-most  
15 boundaries of the range of results, I concluded that the cost of common equity  
16 indicated by my analyses is in the 10.4 percent to 11.4 percent range. After



1 incorporating a minimal adjustment for flotation costs of 15 basis points to my  
2 “bare bones” cost of equity range,<sup>50</sup> I concluded that my analyses indicate a fair  
3 ROE in the 10.55 percent to 11.55 percent range.

**A. Implications for Financial Integrity**

4 **Q. WHY IS IT IMPORTANT TO ALLOW AEP OHIO AN ADEQUATE ROE?**

5 A. Given the importance of the utility industry to the economy and society, it is  
6 essential to maintain reliable and economical service to all consumers. While  
7 AEP Ohio remains committed to providing reliable electric service, a utility’s  
8 ability to fulfill its mandate can be compromised if it lacks the necessary financial  
9 wherewithal or is unable to earn a return sufficient to attract capital.

10 As documented earlier, the major rating agencies have warned of exposure  
11 to uncertainties associated with ongoing capital expenditure requirements,  
12 uncertain economic and financial market conditions, uncertain environmental  
13 compliance costs, and the potential for continued energy price volatility.  
14 Investors understand just how swiftly unforeseen circumstances can lead to  
15 deterioration in a utility’s financial condition, and stakeholders have discovered  
16 first hand how difficult and complex it can be to remedy the situation after the  
17 fact.

18 While providing the infrastructure necessary to enhance the power system  
19 and meet the energy needs of customers is certainly desirable, it imposes  
20 additional financial responsibilities on the AEP Ohio and its parent, AEP. Indeed,  
21 despite the dramatic and sustained fall in utility stock prices, AEP issued new  
22 common shares even at depressed prices in order to meet its capital needs and

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<sup>50</sup> Alternatively, applying the PUCO Staff’s flotation cost adjustment factor of 1.02059 developed in Exhibit WEA-9 would result in a flotation cost adjustment of approximately 20 basis points.

1 support financial strength. For a utility with an obligation to provide reliable  
2 service, investors' increased reticence to supply additional capital during times of  
3 crisis highlights the necessity of preserving the flexibility necessary to overcome  
4 periods of adverse capital market conditions. These considerations heighten the  
5 importance of allowing the Company an adequate ROE.

6 **Q. WHAT ROLE DOES REGULATION PLAY IN ENSURING THAT THE**  
7 **COMPANY HAS ACCESS TO CAPITAL UNDER REASONABLE TERMS**  
8 **AND ON A SUSTAINABLE BASIS?**

9 A. Considering investors' heightened awareness of the risks associated with the  
10 utility industry and the damage that results when a utility's financial flexibility is  
11 compromised, the continuation of supportive regulation remains crucial to the  
12 AEP Ohio's access to capital. Investors recognize that regulation has its own  
13 risks, and that constructive regulation is a key ingredient in supporting utility  
14 credit ratings and financial integrity, particularly during times of adverse  
15 conditions.

16 Fitch concluded, "[G]iven the lingering rate of unemployment and voter  
17 concerns about the economy, there could well be pockets of adverse rate  
18 decisions, and those companies with little financial cushion could suffer adverse  
19 effects."<sup>51</sup> S&P has also emphasized the need for regulatory support, concluding,  
20 "the quality of regulation is at the forefront of our analysis of utility  
21 creditworthiness."<sup>52</sup> Similarly, Moody's concluded:

22 For the longer term, however, we are becoming increasingly  
23 concerned about possible changes to our fundamental assumptions  
24 about regulatory risk, particularly the prospect of a more adversarial

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<sup>51</sup> Fitch Ratings Ltd., "U.S. Utilities, Power and Gas 2010 Outlook," *Global Power North America Special Report* (Dec. 4, 2009).

<sup>52</sup> Standard & Poor's Corporation, "Assessing U.S. Utility Regulatory Environments," *RatingsDirect* (Nov. 7, 2008).

1 political (and therefore regulatory) environment. A prolonged  
2 recessionary climate with high unemployment, or an intense period  
3 of inflation, could make cost recovery more uncertain.<sup>53</sup>

4 Moody's recently noted that it is "watching Ohio's next round of regulatory  
5 restructuring initiatives."<sup>54</sup>

6 **Q. DO CUSTOMERS BENEFIT BY ENHANCING THE UTILITY'S**  
7 **FINANCIAL FLEXIBILITY?**

8 A. Yes. Providing a return that is both commensurate with those available from  
9 investments of corresponding risk and sufficient to maintain the ability to attract  
10 capital, even under duress, is consistent with the economic requirements  
11 embodied in the U.S. Supreme Court's *Bluefield* and *Hope* decisions; but it is also  
12 in customers' best interests. Ultimately, it is customers and the service area  
13 economy that enjoy the benefits that come from ensuring that the utility has the  
14 financial wherewithal to take whatever actions are required to ensure a reliable  
15 energy supply. By the same token, customers also bear a significant burden of  
16 higher capital costs and reduced levels of service when the ability of the utility to  
17 attract capital is impaired.

**B. Capital Structure**

18 **Q. IS AN EVALUATION OF THE CAPITAL STRUCTURE MAINTAINED BY**  
19 **A UTILITY RELEVANT IN ASSESSING ITS RETURN ON EQUITY?**

20 A. Yes. Other things equal, a higher debt ratio, or lower common equity ratio,  
21 translates into increased financial risk for all investors. A greater amount of debt  
22 means more investors have a senior claim on available cash flow, thereby

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<sup>53</sup> Moody's Investors Service, "U.S. Regulated Electric Utilities, Six-Month Update," *Industry Outlook* (July 2009).

<sup>54</sup> Moody's Investors Service, "U.S. Electric Utilities: Uncertain Times Ahead; Strengthening Balance Sheets Now Would Protect Credit," *Special Comment* (Oct. 28, 2010).

1       reducing the certainty that each will receive his contractual payments. This  
2       increases the risks to which lenders are exposed, and they require correspondingly  
3       higher rates of interest. From common shareholders' standpoint, a higher debt  
4       ratio means that there are proportionately more investors ahead of them, thereby  
5       increasing the uncertainty as to the amount of cash flow, if any, that will remain.

6   **Q.   WHAT COMMON EQUITY RATIO IS IMPLICIT IN THE COMPANY'S**  
7       **REQUESTED CAPITAL STRUCTURE?**

8   A.   Common equity as a percent of the capital sources used to compute the overall  
9       rate of return for AEP Ohio is approximately 52.8 percent on a combined basis.

10 **Q.   HOW CAN THE COMPANY'S REQUESTED CAPITAL STRUCTURE BE**  
11       **EVALUATED?**

12 A.   It is generally accepted that the norms established by comparable firms provide  
13       one valid benchmark against which to evaluate the reasonableness of a utility's  
14       capital structure. The capital structure maintained by other electric utilities should  
15       reflect their collective efforts to finance themselves so as to minimize capital costs  
16       while preserving their financial integrity and ability to attract capital. Moreover,  
17       these industry capital structures should also incorporate the requirements of  
18       investors (both debt and equity), as well as the influence of regulators.

19 **Q.   WHAT WAS THE AVERAGE CAPITALIZATION MAINTAINED BY THE**  
20       **UTILITY PROXY GROUP?**

21 A.   As shown on Exhibit WEA-10, for the firms in the Utility Proxy Group, common  
22       equity ratios at December 31, 2009 ranged between 42.3 percent and 63.4 percent  
23       and averaged 48.8 percent of long-term capital.

1   **Q.   WHAT CAPITALIZATION IS REPRESENTATIVE FOR THE UTILITY**  
2       **PROXY GROUP GOING FORWARD?**

3   A.   As shown on Exhibit WEA-10, Value Line expects an average common equity  
4       ratio for the Utility Proxy Group of 51.4 percent for its three-to-five year forecast  
5       horizon, with the individual common equity ratios ranging from 41.0 percent to  
6       67.0 percent.

7   **Q.   WHAT IMPLICATION DOES THE INCREASING RISK OF THE**  
8       **UTILITY INDUSTRY HAVE FOR THE CAPITAL STRUCTURE**  
9       **MAINTAINED BY AEP OHIO?**

10 A.   As discussed earlier, utilities are facing energy market volatility, rising cost  
11       structures, the need to finance significant capital investment plans, uncertainties  
12       over accommodating economic and financial market uncertainties, and ongoing  
13       regulatory risks. Taken together, these considerations warrant a stronger balance  
14       sheet to deal with an increasingly uncertain environment. A more conservative  
15       financial profile, in the form of a higher common equity ratio, is consistent with  
16       increasing uncertainties and the need to maintain the continuous access to capital  
17       that is required to fund operations and necessary system investment, including  
18       times of adverse capital market conditions.

19               Moody's has repeatedly warned investors of the risks associated with debt  
20       leverage and fixed obligations and advised utilities not to squander the  
21       opportunity to strengthen the balance sheet as a buffer against future  
22       uncertainties.<sup>55</sup> More recently, Moody's concluded:

23               From a credit perspective, we believe a strong balance sheet  
24       coupled with abundant sources of liquidity represents one of the

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<sup>55</sup> Moody's Investors Service, "Storm Clouds Gathering on the Horizon for the North American Electric Utility Sector," *Special Comment* (Aug. 2007); "U.S. Electric Utility Sector," *Industry Outlook* (Jan. 2008).

1 best defenses against business and operating risk and potential  
2 negative ratings actions.<sup>56</sup>

3 Similarly, S&P noted that, “we generally consider a debt to capital level of 50% or  
4 greater to be aggressive or highly leveraged for utilities.”<sup>57</sup> Fitch affirmed that it  
5 expects regulated utilities “to extend their conservative balance sheet stance in  
6 2010,” and employ “a judicious mix of debt and equity to finance high levels of  
7 planned investments.”<sup>58</sup>

8 **Q. WHAT OTHER FACTORS DO INVESTORS CONSIDER IN THEIR**  
9 **ASSESSMENT OF A COMPANY’S CAPITAL STRUCTURE?**

10 A. Depending on their specific attributes, contractual agreements or other obligations  
11 that require the utility to make specified payments may be treated as debt in  
12 evaluating AEP Ohio’s financial risk. Because investors consider the debt impact  
13 of such fixed obligations in assessing a utility’s financial position, they imply  
14 greater risk and reduced financial flexibility. In order to offset the resulting debt  
15 equivalent, the utility must rebalance its capital structure by increasing its  
16 common equity in order to restore its effective capitalization ratios to previous  
17 levels.

18 These commitments have been repeatedly cited by major bond rating  
19 agencies in connection with assessments of utility financial risks,<sup>59</sup> with S&P  
20 adjusting AEP Ohio’s reported debt amounts upward to include debt equivalents

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<sup>56</sup> Moody’s Investors Service, “U.S. Electric Utilities Face Challenges Beyond Near-Term,” *Industry Outlook* (Jan. 2010).

<sup>57</sup> Standard & Poor’s Corporation, “Ratings Roundup: U.S. Electric Utility Sector Maintained Strong Credit Quality In A Gloomy 2009,” *RatingsDirect* (Jan. 26, 2010).

<sup>58</sup> Fitch Ratings Ltd., “U.S. Utilities, Power, and Gas 2010 Outlook,” *Global Power North America Special Report* (Dec. 4, 2009).

<sup>59</sup> See, e.g., Standard & Poor’s Corporation, “Implications Of Operating Leases On Analysis Of U.S. Electric Utilities,” *RatingsDirect* (Jan. 15, 2008)

1 associated with lease obligations.<sup>60</sup> Unless the Company takes action to offset  
2 this additional financial risk by maintaining a higher equity ratio, the resulting  
3 leverage will weaken AEP Ohio's creditworthiness and imply greater risk.

4 **Q. HOW DOES THE COMPANY'S COMBINED COMMON EQUITY RATIO**  
5 **COMPARE WITH THOSE MAINTAINED BY THE REFERENCE GROUP**  
6 **OF UTILITIES?**

7 A. AEP Ohio's 52.8 percent common equity ratio is consistent with the range of  
8 capitalizations maintained by the Utility Proxy Group, as well as Value Line's  
9 expectations for these utilities over the near-term. Moreover, while industry  
10 averages provide one benchmark for comparison, each firm must select its  
11 capitalization based on the risks and prospects it faces, as well as its specific  
12 needs to access the capital markets. A public utility with an obligation to serve  
13 must maintain ready access to capital under reasonable terms so that it can meet  
14 the service requirements of its customers. The need for access becomes even  
15 more important when the company has capital requirements over a period of  
16 years, and financing must be continuously available, even during unfavorable  
17 capital market conditions.

18 Financial flexibility plays a crucial role in ensuring the wherewithal to  
19 meet the needs of customers, and utilities with higher leverage may be foreclosed  
20 from additional borrowing, especially during times of stress. AEP Ohio's capital  
21 structure reflects the Company's ongoing efforts to maintain its credit standing  
22 and support access to capital on reasonable terms.

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<sup>60</sup> Standard & Poor's Corporation, "Ohio Power Co.," *RatingsDirect* (Dec. 16, 2010); Standard & Poor's Corporation, "Columbus Southern Power Co.," *RatingsDirect* (Dec. 16, 2010).

### **C. Return on Equity Range Recommendation**

1 **Q. PLEASE SUMMARIZE THE RESULTS OF YOUR ANALYSES.**

2 A. Reflecting the fact that investors' required return on equity is unobservable and no  
3 single method should be viewed in isolation, I used both the DCF and CAPM  
4 methods and referenced expected earned rates of return for utilities. In order to  
5 reflect the risks and prospects associated with AEP Ohio's utility operations, my  
6 analyses focused on a proxy group of other electric utilities. Consistent with the  
7 fact that utilities must compete for capital with firms outside their own industry, I  
8 also referenced a proxy group of low-risk companies in the non-utility sectors of  
9 the economy.

10 As noted earlier, I concluded that the cost of common equity indicated by  
11 my analyses is in the 10.4 percent to 11.4 percent range, or 10.55 percent to 11.55  
12 percent after incorporating a minimum adjustment for flotation costs.

13 **Q. WHAT THEN IS YOUR CONCLUSION AS TO A FAIR ROE FOR AEP**  
14 **OHIO?**

15 A. Considering capital market expectations, the potential exposures faced by AEP  
16 Ohio, and the economic requirements necessary to maintain financial integrity  
17 and support additional capital investment even under adverse circumstances, it is  
18 my opinion that the midpoint of this range, or 11.15 percent, represents a fair and  
19 reasonable ROE for the Company.

20 Apart from the results of the quantitative methods summarized above, it is  
21 crucial to recognize the importance of supporting AEP Ohio's financial position  
22 so that the Company remains prepared to respond to unforeseen events that may  
23 materialize in the future. Recent challenges in the economic and financial market  
24 environment highlight the imperative of maintaining AEP Ohio's financial  
25 strength in attracting the capital needed to secure reliable service at a lower cost



1           for customers. The reasonableness of my recommended ROE is reinforced by the  
2           fact that current cost of capital estimates are likely to understate investors'  
3           requirements at the time the outcome of this proceeding becomes effective and  
4           beyond.

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

6   **A.   Yes.**

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**Summary of Qualifications**

Ph.D. in economics and finance; Chartered Financial Analyst (CFA<sup>®</sup>) designation; extensive expert witness testimony before courts, alternative dispute resolution panels, regulatory agencies and legislative committees; lectured in executive education programs around the world on ethics, investment analysis, and regulation; undergraduate and graduate teaching in business and economics; appointed to leadership positions in government, industry, academia, and the military.

**Employment**

*Principal,*  
FINCAP, Inc.  
(Sep. 1979 to present)

Financial, economic and policy consulting to business and government. Perform business and public policy research, cost/benefit analyses and financial modeling, valuation of businesses (almost 200 entities valued), estimation of damages, statistical and industry studies. Provide strategy advice and educational services in public and private sectors, and serve as expert witness before regulatory agencies, legislative committees, arbitration panels, and courts.

*Director, Economic Research*  
*Division,*  
Public Utility Commission of Texas  
(Dec. 1977 to Aug. 1979)

Responsible for research and testimony preparation on rate of return, rate structure, and econometric analysis dealing with energy, telecommunications, water and sewer utilities. Testified in major rate cases and appeared before legislative committees and served as Chief Economist for agency. Administered state and federal grant funds. Communicated frequently with political leaders and representatives from consumer groups, media, and investment community.

*Manager, Financial Education,*  
International Paper Company  
New York City  
(Feb. 1977 to Nov. 1977)

Directed corporate education programs in accounting, finance, and economics. Developed course materials, recruited and trained instructors, liaison within the company and with academic institutions. Prepared operating budget and designed financial controls for corporate professional development program.

*Lecturer in Finance,*

The University of Texas at Austin  
(Sep. 1979 to May 1981)  
Assistant Professor of Finance,  
(Sep. 1975 to May 1977)

Taught graduate and undergraduate courses in financial management and investment theory. Conducted research in business and public policy. Named Outstanding Graduate Business Professor and received various administrative appointments.

*Assistant Professor of Business,*  
University of North Carolina at  
Chapel Hill  
(Sep. 1972 to Jul. 1975)

Taught in BBA, MBA, and Ph.D. programs. Created project course in finance, Financial Management for Women, and participated in developing Small Business Management sequence. Organized the North Carolina Institute for Investment Research, a group of financial institutions that supported academic research. Faculty advisor to the Media Board, which funds student publications and broadcast stations.

**Education**

*Ph.D., Economics and Finance,*  
University of North Carolina at  
Chapel Hill  
(Jan. 1969 to Aug. 1972)

Elective courses included financial management, public finance, monetary theory, and econometrics. Awarded the Stonier Fellowship by the American Bankers' Association and University Teaching Fellowship. Taught statistics, macroeconomics, and microeconomics.

Dissertation: *The Geometric Mean Strategy as a Theory of Multiperiod Portfolio Choice*

*B.A., Economics,*  
Emory University, Atlanta, Georgia  
(Sep. 1961 to Jun. 1965)

Active in extracurricular activities, president of the Barkley Forum (debate team), Emory Religious Association, and Delta Tau Delta chapter. Individual awards and team championships at national collegiate debate tournaments.

**Professional Associations**

Received Chartered Financial Analyst (CFA) designation in 1977; Vice President for Membership, Financial Management Association; President, Austin Chapter of Planning Executives Institute; Board of Directors, North Carolina Society of Financial Analysts; Candidate Curriculum Committee, Association for Investment Management and Research; Executive Committee of Southern Finance Association; Vice Chair, Staff Subcommittee on Economics and National Association of Regulatory Utility Commissioners (NARUC); Appointed to NARUC Technical Subcommittee on the National Energy Act.

**Teaching in Executive Education Programs**

University-Sponsored Programs: Central Michigan University, Duke University, Louisiana State University, National Defense University, National University of Singapore, Texas A&M University, University of Kansas, University of North Carolina, University of Texas.

*Business and Government-Sponsored Programs:* Advanced Seminar on Earnings Regulation, American Public Welfare Association, Association for Investment Management and Research, Congressional Fellows Program, Cost of Capital Workshop, Electricity Consumers Resource Council, Financial Analysts Association of Indonesia, Financial Analysts Review, Financial Analysts Seminar at Northwestern University, Governor's Executive Development Program of Texas, Louisiana Association of Business and Industry, National Association of Purchasing Management, National Association of Tire Dealers, Planning Executives Institute, School of Banking of the South, State of Wisconsin Investment Board, Stock Exchange of Thailand, Texas Association of State Sponsored Computer Centers, Texas Bankers' Association, Texas Bar Association, Texas Savings and Loan League, Texas Society of CPAs, Tokyo Association of Foreign Banks, Union Bank of Switzerland, U.S. Department of State, U.S. Navy, U.S. Veterans Administration, in addition to Texas state agencies and major corporations.

Presented papers for Mills B. Lane Lecture Series at the University of Georgia and Heubner Lectures at the University of Pennsylvania. Taught graduate courses in finance and economics for evening program at St. Edward's University in Austin from January 1979 through 1998.

### **Expert Witness Testimony**

Testified in over 300 cases before regulatory agencies addressing cost of capital, regulatory policy, rate design, and other economic and financial issues.

*Federal Agencies:* Federal Communications Commission, Federal Energy Regulatory Commission, Surface Transportation Board, Interstate Commerce Commission, and the Canadian Radio-Television and Telecommunications Commission.

*State Regulatory Agencies:* Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Michigan, Missouri, Nevada, New Mexico, Montana, Nebraska, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Texas, Utah, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

Testified in 42 cases before federal and state courts, arbitration panels, and alternative dispute tribunals (89 depositions given) regarding damages, valuation, antitrust liability, fiduciary duties, and other economic and financial issues.

### **Board Positions and Other Professional Activities**

Audit Committee and Outside Director, Georgia System Operations Corporation (electric system operator for member-owned electric cooperatives in Georgia); Chairman, Board of Print Depot, Inc. and FINCAP, Inc.; Co-chair, Synchronous Interconnection Committee, appointed by Public Utility Commission of Texas and approved by governor; Appointed by Hays County Commission to Citizens Advisory Committee of Habitat Conservation Plan, Operator of AAA Ranch, a certified organic producer of agricultural products; Appointed to Organic Livestock Advisory Committee by Texas Agricultural Commissioner Susan Combs; Appointed by Texas Railroad Commissioners to study group for *The UP/SP Merger: An Assessment of the Impacts on the State of Texas*; Appointed by Hawaii Public Utilities Commission to team reviewing affiliate relationships of Hawaiian Electric Industries; Chairman, Energy Task Force, Greater Austin-San Antonio Corridor Council; Consultant to Public Utility Commission of Texas on cogeneration policy and other matters; Consultant to

Public Service Commission of New Mexico on cogeneration policy; Evaluator of Energy Research Grant Proposals for Texas Higher Education Coordinating Board.

### **Community Activities**

Board of Directors, Sustainable Food Center; Chair, Board of Deacons, Finance Committee, and Elder, Central Presbyterian Church of Austin; Founding Member, Orange-Chatham County (N.C.) Legal Aid Screening Committee.

### **Military**

Captain, U.S. Naval Reserve (retired after 28 years service); Commanding Officer, Naval Special Warfare Engineering (SEAL) Support Unit; Officer-in-Charge of SWIFT patrol boat in Vietnam; Enlisted service as weather analyst (advanced to second class petty officer).

### **Bibliography**

#### **Monographs**

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- "Production Capacity Allocation: Conversion, CWIP, and One-Armed Economics," *Proceedings of the NARUC Biennial Regulatory Information Conference* (1978)
- "Some Thoughts on the Rate of Return to Public Utility Companies," with Bruce H. Fairchild in *Proceedings of the NARUC Biennial Regulatory Information Conference* (1978)
- "A New Capital Budgeting Measure: The Integration of Time, Liquidity, and Uncertainty," with David Cordell in *Proceedings of the Southwestern Finance Association* (1977)
- "Usefulness of Current Values to Investors and Creditors," in *Inflation Accounting/Indexing and Stock Behavior* (1977)
- "Consumer Expectations and the Economy," *Texas Business Review* (Nov. 1976)
- "Portfolio Performance Evaluation and Long-run Capital Growth," with Henry A. Latané in *Proceedings of the Eastern Finance Association* (1973)
- Book reviews in *Journal of Finance* and *Financial Review*. Abstracts for *CFA Digest*. Articles in *Carolina Financial Times*.

#### **Selected Papers and Presentations**

- "Economic Perspective on Water Marketing in Texas," 2009 Water Law Institute, The University of Texas School of Law, Austin, TX (Dec. 2009).
- "Estimating Utility Cost of Equity in Financial Turmoil," SNL EXNET 15<sup>th</sup> Annual FERC Briefing, Washington, D.C. (Mar. 2009)
- "The Who, What, When, How, and Why of Ethics," San Antonio Financial Analysts Society (Jan. 16, 2002). Similar presentation given to the Austin Society of Financial Analysts (Jan. 17, 2002)
- "Ethics for Financial Analysts," Sponsored by Canadian Council of Financial Analysts: delivered in Calgary, Edmonton, Regina, and Winnipeg, June 1997. Similar presentations given to Austin Society of Financial Analysts (Mar. 1994), San Antonio Society of Financial Analysts (Nov. 1985), and St. Louis Society of Financial Analysts (Feb. 1986)
- "Cost of Capital for Multi-Divisional Corporations," Financial Management Association, New Orleans, Louisiana (Oct. 1996)
- "Ethics and the Treasury Function," Government Treasurers Organization of Texas, Corpus Christi, Texas (Jun. 1996)
- "A Cooperative Future," Iowa Association of Electric Cooperatives, Des Moines (December 1995). Similar presentations given to National G & T Conference, Irving, Texas (June 1995), Kentucky Association of Electric Cooperatives Annual Meeting, Louisville (Nov. 1994), Virginia, Maryland, and Delaware Association of Electric Cooperatives Annual Meeting, Richmond (July 1994), and Carolina Electric Cooperatives Annual Meeting, Raleigh (Mar. 1994)
- "Information Superhighway Warnings: Speed Bumps on Wall Street and Detours from the Economy," Texas Society of Certified Public Accountants Natural Gas, Telecommunications and Electric Industries Conference, Austin (Apr. 1995)
- "Economic/Wall Street Outlook," Carolinas Council of the Institute of Management Accountants, Myrtle Beach, South Carolina (May 1994). Similar presentation given to Bell Operating Company Accounting Witness Conference, Santa Fe, New Mexico (Apr. 1993)
- "Regulatory Developments in Telecommunications," Regional Holding Company Financial and Accounting Conference, San Antonio (Sep. 1993)

- "Estimating the Cost of Capital During the 1990s: Issues and Directions," The National Society of Rate of Return Analysts, Washington, D.C. (May 1992)
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- "An Optimal Approach to the Finance Decision," with Henry A. Latané, Southern Finance Association, Atlanta (Nov. 1974)
- "A Pragmatic Approach to the Capital Structure Decision Based on Long-Run Growth," with Henry A. Latané, Financial Management Association, San Diego (Oct. 1974)
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DCF MODEL

Exhibit WEA-2  
Page 1 of 1

UTILITY PROXY GROUP

|    | Company                | (a) Dividend Yield |           |       | (b)   | (c) Growth Rates |       |       | (d)   | (e)   | (f) Cost of Equity Estimates |        |      |       |       |
|----|------------------------|--------------------|-----------|-------|-------|------------------|-------|-------|-------|-------|------------------------------|--------|------|-------|-------|
|    |                        | Price              | Dividends | Yield |       | V Line           | IBES  | Zacks |       |       | br+sv                        | V Line | IBES | Zacks | br+sv |
|    |                        |                    |           |       |       |                  |       |       |       |       |                              |        |      |       |       |
| 1  | Alliant Energy         | \$ 37.63           | \$ 1.70   | 4.5%  | 7.0%  | 7.3%             | 3.5%  | 6.1%  | 11.5% | 11.8% | 8.0%                         | 10.7%  |      |       |       |
| 2  | Ameren Corp.           | \$ 29.02           | \$ 1.54   | 5.3%  | -2.5% | -2.0%            | -2.0% | 2.5%  | 2.8%  | 3.3%  | 3.3%                         | 7.8%   |      |       |       |
| 3  | American Elec Pwr      | \$ 36.66           | \$ 1.84   | 5.0%  | 3.0%  | 3.1%             | 4.0%  | 4.8%  | 8.0%  | 8.1%  | 9.0%                         | 9.8%   |      |       |       |
| 4  | Cleco Corp.            | \$ 31.45           | \$ 1.08   | 3.4%  | 9.5%  | 3.0%             | 7.0%  | 5.5%  | 12.9% | 6.4%  | 10.4%                        | 8.9%   |      |       |       |
| 5  | Constellation Energy   | \$ 32.00           | \$ 0.96   | 3.0%  | 7.0%  | 9.9%             | 9.9%  | 4.9%  | 10.0% | 12.9% | 12.9%                        | 7.9%   |      |       |       |
| 6  | DTE Energy Co.         | \$ 46.89           | \$ 2.30   | 4.9%  | 6.5%  | 5.2%             | 5.0%  | 3.9%  | 11.4% | 10.1% | 9.9%                         | 8.8%   |      |       |       |
| 7  | Entergy Corp.          | \$ 73.50           | \$ 3.38   | 4.6%  | 2.0%  | 2.0%             | 1.5%  | 4.5%  | 6.6%  | 6.6%  | 6.1%                         | 9.1%   |      |       |       |
| 8  | Exelon Corp.           | \$ 43.20           | \$ 2.10   | 4.9%  | -3.0% | -0.8%            | -2.5% | 5.1%  | 1.9%  | 4.1%  | 2.4%                         | 9.9%   |      |       |       |
| 9  | Great Plains Energy    | \$ 19.95           | \$ 0.87   | 4.4%  | 4.5%  | 8.9%             | 9.0%  | 2.4%  | 8.9%  | 13.3% | 13.4%                        | 6.8%   |      |       |       |
| 10 | Hawaiian Elec.         | \$ 24.89           | \$ 1.24   | 5.0%  | 11.5% | 7.5%             | 9.5%  | 4.2%  | 16.5% | 12.5% | 14.5%                        | 9.2%   |      |       |       |
| 11 | IDACORP, Inc.          | \$ 38.29           | \$ 1.20   | 3.1%  | 5.5%  | 4.7%             | 4.7%  | 5.0%  | 8.6%  | 7.8%  | 7.8%                         | 8.1%   |      |       |       |
| 12 | Integrus Energy Group  | \$ 48.17           | \$ 2.72   | 5.6%  | 11.0% | 7.9%             | 10.4% | 3.2%  | 16.6% | 13.5% | 16.0%                        | 8.8%   |      |       |       |
| 13 | OGE Energy Corp.       | \$ 45.96           | \$ 1.50   | 3.3%  | 6.5%  | 7.3%             | 5.5%  | 7.6%  | 9.8%  | 10.6% | 8.8%                         | 10.8%  |      |       |       |
| 14 | PG&E Corp.             | \$ 47.00           | \$ 1.92   | 4.1%  | 6.0%  | 6.5%             | 7.7%  | 6.7%  | 10.1% | 10.6% | 11.8%                        | 10.7%  |      |       |       |
| 15 | Pinnacle West Capital  | \$ 42.11           | \$ 2.10   | 5.0%  | 6.0%  | 6.2%             | 6.5%  | 3.7%  | 11.0% | 11.2% | 11.5%                        | 8.6%   |      |       |       |
| 16 | Portland General Elec. | \$ 22.28           | \$ 1.07   | 4.8%  | 3.0%  | 5.0%             | 5.6%  | 3.7%  | 7.8%  | 9.8%  | 10.4%                        | 8.5%   |      |       |       |
| 17 | PPL Corp.              | \$ 25.83           | \$ 1.40   | 5.4%  | 3.0%  | 3.6%             | 2.6%  | 10.4% | 8.4%  | 9.0%  | 8.0%                         | 15.8%  |      |       |       |
| 18 | Pub Sv Enterprise Grp  | \$ 32.50           | \$ 1.40   | 4.3%  | 2.0%  | 3.0%             | 0.5%  | 7.0%  | 6.3%  | 7.3%  | 4.8%                         | 11.3%  |      |       |       |
| 19 | SCANA Corp.            | \$ 42.50           | \$ 1.92   | 4.5%  | 3.5%  | 5.1%             | 5.0%  | 5.4%  | 8.0%  | 9.6%  | 9.5%                         | 10.0%  |      |       |       |
| 20 | Sempra Energy          | \$ 52.58           | \$ 1.68   | 3.2%  | 1.0%  | 5.0%             | 7.0%  | 5.7%  | 4.2%  | 8.2%  | 10.2%                        | 8.9%   |      |       |       |
| 21 | Westar Energy          | \$ 25.96           | \$ 1.26   | 4.9%  | 8.5%  | 6.1%             | 4.7%  | 4.9%  | 13.4% | 11.0% | 9.6%                         | 9.7%   |      |       |       |
| 22 | Wisconsin Energy       | \$ 60.32           | \$ 2.10   | 3.5%  | 9.5%  | 10.2%            | 8.5%  | 6.5%  | 13.0% | 13.7% | 12.0%                        | 10.0%  |      |       |       |
|    | Average (g)            |                    |           |       |       |                  |       |       | 10.9% | 10.8% | 10.8%                        | 9.7%   |      |       |       |

(a) Recent price and estimated dividend for next 12 mos. from The Value Line Investment Survey Summary and Index (Feb. 4, 2011).

(b) The Value Line Investment Survey (Nov. 26, & Dec. 24, 2010, Feb. 4, 2011).

(c) Thomson Reuters Company in Context Report (Feb. 1, 2011).

(d) www.zacks.com (retrieved Feb. 2, 2011).

(e) See Schedule 3.

(f) Sum of dividend yield and respective growth rate

(g) Excludes highlighted figures.



## BR + SV GROWTH RATE

Exhibit WEA-3

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UTILITY PROXY GROUP

|         |                         | (a)    |        | (a)     |       | (a)   |        | (b)        |        | (c)        |      | (d)      |          | (e)    |  |         |
|---------|-------------------------|--------|--------|---------|-------|-------|--------|------------|--------|------------|------|----------|----------|--------|--|---------|
|         |                         | 2014   |        | 2014    |       | 2014  |        | Adjustment |        | Adjusted r |      | s        |          | v      |  | br + sv |
| Company |                         | EPS    | DPS    | BVPS    | b     | r     | Factor |            | Factor |            |      |          |          |        |  |         |
| 1       | Alliant Energy          | \$3.60 | \$1.92 | \$30.60 | 46.7% | 11.8% | 1.0246 |            | 1.0246 | 12.1%      | 5.6% | 0.0147   | 0.3558   | 0.52%  |  | 6.1%    |
| 2       | Ameren Corp.            | \$2.50 | \$1.54 | \$35.50 | 38.4% | 7.0%  | 1.0144 |            | 1.0144 | 7.1%       | 2.7% | 0.0122   | (0.1833) | -0.22% |  | 2.5%    |
| 3       | American Elec Pwr       | \$3.50 | \$2.00 | \$34.25 | 42.9% | 10.2% | 1.0262 |            | 1.0262 | 10.5%      | 4.5% | 0.0108   | 0.2389   | 0.26%  |  | 4.8%    |
| 4       | Cleco Corp.             | \$2.75 | \$1.45 | \$25.75 | 47.3% | 10.7% | 1.0412 |            | 1.0412 | 11.1%      | 5.3% | 0.0178   | 0.1417   | 0.25%  |  | 5.5%    |
| 5       | Constellation Energy    | \$3.25 | \$1.00 | \$45.25 | 69.2% | 7.2%  | 1.0075 |            | 1.0075 | 7.2%       | 5.0% | 0.0052   | (0.1313) | -0.07% |  | 4.9%    |
| 6       | DTE Energy Co.          | \$4.25 | \$2.60 | \$45.75 | 38.8% | 9.3%  | 1.0250 |            | 1.0250 | 9.5%       | 3.7% | 0.0136   | 0.1682   | 0.23%  |  | 3.9%    |
| 7       | Entergy Corp.           | \$6.75 | \$3.60 | \$59.75 | 46.7% | 11.3% | 1.0182 |            | 1.0182 | 11.5%      | 5.4% | (0.0266) | 0.3361   | -0.89% |  | 4.5%    |
| 8       | Exelon Corp.            | \$3.50 | \$2.10 | \$25.00 | 40.0% | 14.0% | 1.0240 |            | 1.0240 | 14.3%      | 5.7% | (0.0129) | 0.5238   | -0.67% |  | 5.1%    |
| 9       | Great Plains Energy     | \$1.75 | \$1.15 | \$22.50 | 34.3% | 7.8%  | 1.0251 |            | 1.0251 | 8.0%       | 2.7% | 0.0297   | (0.0976) | -0.29% |  | 2.4%    |
| 10      | Hawaiian Elec.          | \$2.00 | \$1.30 | \$18.00 | 35.0% | 11.1% | 1.0220 |            | 1.0220 | 11.4%      | 4.0% | 0.0098   | 0.2653   | 0.26%  |  | 4.2%    |
| 11      | IDACORP, Inc.           | \$3.10 | \$1.40 | \$36.50 | 54.8% | 8.5%  | 1.0303 |            | 1.0303 | 8.8%       | 4.8% | 0.0181   | 0.0875   | 0.16%  |  | 5.0%    |
| 12      | Integritys Energy Group | \$4.00 | \$2.72 | \$41.75 | 32.0% | 9.6%  | 1.0134 |            | 1.0134 | 9.7%       | 3.1% | 0.0074   | 0.1211   | 0.09%  |  | 3.2%    |
| 13      | OGE Energy Corp.        | \$3.75 | \$1.65 | \$30.00 | 56.0% | 12.5% | 1.0386 |            | 1.0386 | 13.0%      | 7.3% | 0.0081   | 0.3684   | 0.30%  |  | 7.6%    |
| 14      | PG&E Corp.              | \$4.25 | \$2.20 | \$36.25 | 48.2% | 11.7% | 1.0384 |            | 1.0384 | 12.2%      | 5.9% | 0.0332   | 0.2368   | 0.79%  |  | 6.7%    |
| 15      | Pinnacle West Capital   | \$3.50 | \$2.30 | \$38.25 | 34.3% | 9.2%  | 1.0339 |            | 1.0339 | 9.5%       | 3.2% | 0.0418   | 0.1000   | 0.42%  |  | 3.7%    |
| 16      | Portland General Elec.  | \$2.00 | \$1.20 | \$23.75 | 40.0% | 8.4%  | 1.0327 |            | 1.0327 | 8.7%       | 3.5% | 0.0385   | 0.0500   | 0.19%  |  | 3.7%    |
| 17      | PPL Corp.               | \$2.50 | \$1.60 | \$22.00 | 36.0% | 11.4% | 1.0816 |            | 1.0816 | 12.3%      | 4.4% | 0.1435   | 0.4133   | 5.93%  |  | 10.4%   |
| 18      | Pub Sv Enterprise Grp   | \$3.25 | \$1.50 | \$26.00 | 53.8% | 12.5% | 1.0398 |            | 1.0398 | 13.0%      | 7.0% | 0.0000   | 0.3500   | 0.00%  |  | 7.0%    |
| 19      | SCANA Corp.             | \$3.50 | \$2.00 | \$35.25 | 42.9% | 9.9%  | 1.0418 |            | 1.0418 | 10.3%      | 4.4% | 0.0463   | 0.2167   | 1.00%  |  | 5.4%    |
| 20      | Sempra Energy           | \$4.75 | \$2.05 | \$47.50 | 56.8% | 10.0% | 1.0230 |            | 1.0230 | 10.2%      | 5.8% | (0.0085) | 0.1739   | -0.15% |  | 5.7%    |
| 21      | Westar Energy           | \$2.40 | \$1.40 | \$24.20 | 41.7% | 9.9%  | 1.0281 |            | 1.0281 | 10.2%      | 4.2% | 0.0322   | 0.1933   | 0.62%  |  | 4.9%    |
| 22      | Wisconsin Energy        | \$5.25 | \$2.70 | \$40.00 | 48.6% | 13.1% | 1.0277 |            | 1.0277 | 13.5%      | 6.6% | (0.0000) | 0.5000   | 0.00%  |  | 6.5%    |

## UTILITY PROXY GROUP

|    | Company                | 2009     |          |          | 2014     |          |          | Chg   | 2014 Price |         |         | Common Shares |        |        |        |
|----|------------------------|----------|----------|----------|----------|----------|----------|-------|------------|---------|---------|---------------|--------|--------|--------|
|    |                        | Eq Ratio | Tot Cap  | Com Eq   | Eq Ratio | Tot Cap  | Com Eq   |       | High       | Low     | Avg.    | M/B           | 2009   | 2014   | Growth |
| 1  | Alliant Energy         | 51.2%    | \$5,423  | \$2,777  | 51.5%    | \$6,895  | \$3,551  | 5.0%  | \$55.00    | \$40.00 | \$47.50 | 1.552         | 110.66 | 116.00 | 0.95%  |
| 2  | Ameren Corp.           | 49.1%    | \$15,991 | \$7,852  | 51.5%    | \$17,600 | \$9,064  | 2.9%  | \$35.00    | \$25.00 | \$30.00 | 0.845         | 237.40 | 255.00 | 1.44%  |
| 3  | American Elec Pwr      | 45.4%    | \$28,958 | \$13,147 | 48.0%    | \$35,600 | \$17,088 | 5.4%  | \$55.00    | \$35.00 | \$45.00 | 1.314         | 478.05 | 498.00 | 0.82%  |
| 4  | Cleco Corp.            | 45.8%    | \$2,436  | \$1,116  | 53.5%    | \$3,150  | \$1,685  | 8.6%  | \$35.00    | \$25.00 | \$30.00 | 1.165         | 60.26  | 65.00  | 1.53%  |
| 5  | Constellation Energy   | 63.5%    | \$13,701 | \$8,700  | 67.0%    | \$14,000 | \$9,380  | 1.5%  | \$50.00    | \$30.00 | \$40.00 | 0.884         | 200.99 | 207.00 | 0.59%  |
| 6  | DTE Energy Co.         | 46.0%    | \$13,648 | \$6,278  | 48.0%    | \$16,800 | \$8,064  | 5.1%  | \$65.00    | \$45.00 | \$55.00 | 1.202         | 165.40 | 175.00 | 1.13%  |
| 7  | Entergy Corp.          | 43.1%    | \$19,985 | \$8,614  | 41.0%    | \$25,200 | \$10,332 | 3.7%  | \$105.00   | \$75.00 | \$90.00 | 1.506         | 189.12 | 173.00 | -1.77% |
| 8  | Exelon Corp.           | 52.4%    | \$24,112 | \$12,635 | 55.0%    | \$29,200 | \$16,060 | 4.9%  | \$60.00    | \$45.00 | \$52.50 | 2.100         | 660.00 | 640.00 | -0.61% |
| 9  | Great Plains Energy    | 46.2%    | \$6,045  | \$2,793  | 46.0%    | \$7,800  | \$3,588  | 5.1%  | \$25.00    | \$16.00 | \$20.50 | 0.911         | 135.42 | 159.00 | 3.26%  |
| 10 | Hawaiian Elec.         | 50.7%    | \$2,841  | \$1,440  | 52.0%    | \$3,450  | \$1,794  | 4.5%  | \$30.00    | \$19.00 | \$24.50 | 1.361         | 95.52  | 99.00  | 0.72%  |
| 11 | IDACORP, Inc.          | 49.8%    | \$2,807  | \$1,398  | 50.5%    | \$3,750  | \$1,894  | 6.3%  | \$50.00    | \$30.00 | \$40.00 | 1.096         | 47.90  | 52.00  | 1.66%  |
| 12 | Integrus Energy Group  | 53.9%    | \$5,304  | \$2,859  | 52.5%    | \$6,225  | \$3,268  | 2.7%  | \$55.00    | \$40.00 | \$47.50 | 1.138         | 75.98  | 78.50  | 0.65%  |
| 13 | OGE Energy Corp.       | 49.4%    | \$4,130  | \$2,040  | 49.0%    | \$6,125  | \$3,001  | 8.0%  | \$55.00    | \$40.00 | \$47.50 | 1.583         | 97.00  | 99.50  | 0.51%  |
| 14 | PG&E Corp.             | 47.4%    | \$21,793 | \$10,330 | 54.0%    | \$28,100 | \$15,174 | 8.0%  | \$55.00    | \$40.00 | \$47.50 | 1.310         | 370.60 | 420.00 | 2.53%  |
| 15 | Pinnacle West Capital  | 49.6%    | \$6,687  | \$3,317  | 53.5%    | \$8,700  | \$4,655  | 7.0%  | \$50.00    | \$35.00 | \$42.50 | 1.111         | 101.43 | 122.00 | 3.76%  |
| 16 | Portland General Elec. | 49.7%    | \$3,100  | \$1,541  | 50.0%    | \$4,275  | \$2,138  | 6.8%  | \$30.00    | \$20.00 | \$25.00 | 1.053         | 75.21  | 90.00  | 3.66%  |
| 17 | PPL Corp.              | 42.5%    | \$12,940 | \$5,500  | 53.5%    | \$23,300 | \$12,466 | 17.8% | \$45.00    | \$30.00 | \$37.50 | 1.705         | 377.18 | 565.00 | 8.42%  |
| 18 | Pub Sv Enterprise Grp  | 53.2%    | \$16,513 | \$8,785  | 60.0%    | \$21,800 | \$13,080 | 8.3%  | \$45.00    | \$35.00 | \$40.00 | 1.538         | 505.99 | 506.00 | 0.00%  |
| 19 | SCANA Corp.            | 43.2%    | \$7,891  | \$3,409  | 47.5%    | \$10,900 | \$5,178  | 8.7%  | \$50.00    | \$40.00 | \$45.00 | 1.277         | 123.00 | 147.00 | 3.63%  |
| 20 | Sempra Energy          | 54.1%    | \$16,646 | \$9,005  | 51.5%    | \$22,000 | \$11,330 | 4.7%  | \$65.00    | \$50.00 | \$57.50 | 1.211         | 246.50 | 238.00 | -0.70% |
| 21 | Westar Energy          | 47.4%    | \$4,778  | \$2,265  | 46.0%    | \$6,520  | \$2,999  | 5.8%  | \$35.00    | \$25.00 | \$30.00 | 1.240         | 109.07 | 124.00 | 2.60%  |
| 22 | Wisconsin Energy       | 47.7%    | \$7,473  | \$3,565  | 49.5%    | \$9,500  | \$4,703  | 5.7%  | \$90.00    | \$70.00 | \$80.00 | 2.000         | 116.91 | 116.90 | 0.00%  |

(a) The Value Line Investment Survey (Nov. 26, &amp; Dec. 24, 2010, Feb. 4, 2011).

(b) Computed using the formula  $2^{*}(1+5\text{-Yr. Change in Equity})/(2+5\text{ Yr. Change in Equity})$ .

(c) Product of average year-end "r" for 2014 and Adjustment Factor.

(d) Product of change in common shares outstanding and M/B Ratio.

(e) Computed as  $1 - B/M$  Ratio.

(f) Product of total capital and equity ratio.

(g) Five-year rate of change.

(h) Average of High and Low expected market prices divided by 2013-15 BVPS.

NON-UTILITY PROXY GROUP

|                         | (a)      | (a)          | (b)   | (c)   | (d)   | (e)                      | (e)   | (e)   | (e)   |
|-------------------------|----------|--------------|-------|-------|-------|--------------------------|-------|-------|-------|
|                         | Dividend | Growth Rates |       |       |       | Cost of Equity Estimates |       |       |       |
| Company                 | Yield    | V Line       | IBES  | Zacks | br+sv | V Line                   | IBES  | Zacks | br+sv |
| 1 3M Company            | 2.39%    | 7.0%         | 11.9% | 11.3% | 12.9% | 9.4%                     | 14.3% | 13.7% | 15.3% |
| 2 Abbott Labs.          | 3.67%    | 10.0%        | 8.9%  | 9.0%  | 15.0% | 13.7%                    | 12.6% | 12.7% | 18.7% |
| 3 Alberto-Culver        | 1.02%    | 15.0%        | 9.4%  | 12.5% | 8.4%  | 16.0%                    | 10.4% | 13.5% | 9.4%  |
| 4 AT&T Inc.             | 6.09%    | 5.5%         | 5.7%  | 7.0%  | 5.4%  | 11.6%                    | 11.8% | 13.1% | 11.5% |
| 5 Automatic Data Proc.  | 2.93%    | 8.0%         | 10.6% | 10.8% | 9.5%  | 10.9%                    | 13.5% | 13.7% | 12.4% |
| 6 Bard (C.R.)           | 0.77%    | 9.5%         | 10.9% | 11.8% | 18.1% | 10.3%                    | 11.7% | 12.6% | 18.9% |
| 7 Baxter Int'l Inc.     | 2.45%    | 10.0%        | 9.6%  | 9.3%  | 15.5% | 12.5%                    | 12.1% | 11.8% | 17.9% |
| 8 Becton, Dickinson     | 1.97%    | 9.5%         | 9.9%  | 10.8% | 9.0%  | 11.5%                    | 11.9% | 12.8% | 11.0% |
| 9 Bristol-Myers Squibb  | 5.11%    | 8.5%         | 1.8%  | 2.0%  | 5.7%  | 13.6%                    | 6.9%  | 7.1%  | 10.8% |
| 10 Brown-Forman 'B'     | 1.90%    | 7.5%         | 10.9% | 13.0% | 10.6% | 9.4%                     | 12.8% | 14.9% | 12.5% |
| 11 Chubb Corp.          | 2.55%    | 2.5%         | 8.7%  | 9.8%  | 8.0%  | 5.1%                     | 11.3% | 12.4% | 10.5% |
| 12 Church & Dwight      | 0.97%    | 12.0%        | 11.8% | 12.0% | 10.3% | 13.0%                    | 12.8% | 13.0% | 11.3% |
| 13 Coca-Cola            | 2.80%    | 9.5%         | 8.7%  | 9.0%  | 9.9%  | 12.3%                    | 11.5% | 11.8% | 12.7% |
| 14 Colgate-Palmolive    | 2.76%    | 11.0%        | 9.3%  | 9.2%  | 18.1% | 13.8%                    | 12.1% | 12.0% | 20.8% |
| 15 Commerce Bancshs.    | 2.22%    | 7.0%         | 7.0%  | 7.0%  | 7.9%  | 9.2%                     | 9.2%  | 9.2%  | 10.1% |
| 16 ConAgra Foods        | 3.92%    | 10.5%        | 7.7%  | 8.0%  | 8.1%  | 14.4%                    | 11.6% | 11.9% | 12.0% |
| 17 Costco Wholesale     | 1.24%    | 7.5%         | 13.3% | 12.9% | 8.2%  | 8.7%                     | 14.5% | 14.1% | 9.5%  |
| 18 Cullen/Frost Bankers | 2.96%    | 4.5%         | 8.5%  | 8.0%  | 5.7%  | 7.5%                     | 11.5% | 11.0% | 8.6%  |
| 19 CVS Caremark Corp.   | 1.42%    | 9.5%         | 10.1% | 12.0% | 7.8%  | 10.9%                    | 11.5% | 13.4% | 9.2%  |
| 20 Ecolab Inc.          | 1.41%    | 12.0%        | 13.2% | 13.2% | 19.6% | 13.4%                    | 14.6% | 14.6% | 21.0% |
| 21 Exxon Mobil Corp.    | 2.26%    | 6.0%         | 12.1% | 8.4%  | 13.5% | 8.3%                     | 14.4% | 10.7% | 15.7% |
| 22 Gen'l Mills          | 3.02%    | 9.5%         | 7.7%  | 8.0%  | 9.3%  | 12.5%                    | 10.7% | 11.0% | 12.3% |
| 23 Heinz (H.J.)         | 3.85%    | 6.5%         | 7.0%  | 8.0%  | 13.9% | 10.4%                    | 10.9% | 11.9% | 17.8% |
| 24 Hormel Foods         | 2.01%    | 10.5%        | 10.0% | 9.3%  | 10.7% | 12.5%                    | 12.0% | 11.3% | 12.7% |
| 25 Int'l Business Mach. | 1.77%    | 13.0%        | 11.5% | 9.3%  | 20.4% | 14.8%                    | 13.3% | 11.1% | 22.2% |
| 26 Johnson & Johnson    | 3.44%    | 4.5%         | 6.0%  | 5.8%  | 10.8% | 7.9%                     | 9.4%  | 9.2%  | 14.2% |
| 27 Kellogg              | 3.14%    | 9.5%         | 8.6%  | 9.0%  | 9.7%  | 12.6%                    | 11.7% | 12.1% | 12.9% |
| 28 Kimberly-Clark       | 4.09%    | 6.5%         | 7.5%  | 8.7%  | 18.6% | 10.6%                    | 11.6% | 12.8% | 22.7% |
| 29 Kraft Foods          | 3.71%    | 8.0%         | 8.4%  | 8.0%  | 10.7% | 11.7%                    | 12.1% | 11.7% | 14.4% |
| 30 Lilly (Eli)          | 5.64%    | -2.5%        | -6.4% | -5.3% | 8.4%  | 3.1%                     | -0.8% | 0.3%  | 14.0% |
| 31 Lockheed Martin      | 3.78%    | 10.0%        | 8.1%  | 6.8%  | 20.3% | 13.8%                    | 11.9% | 10.6% | 24.1% |
| 32 Lorillard Inc.       | 6.06%    | 10.5%        | 6.0%  | 6.0%  | 10.9% | 16.6%                    | 12.1% | 12.1% | 17.0% |
| 33 McCormick & Co.      | 2.24%    | 8.5%         | 9.6%  | 9.5%  | 13.3% | 10.7%                    | 11.8% | 11.7% | 15.6% |
| 34 McDonald's Corp.     | 3.25%    | 9.5%         | 9.8%  | 9.3%  | 10.7% | 12.8%                    | 13.1% | 12.6% | 13.9% |
| 35 McKesson Corp.       | 0.98%    | 10.0%        | 14.2% | 11.0% | 11.7% | 11.0%                    | 15.2% | 12.0% | 12.7% |
| 36 Medtronic, Inc.      | 2.47%    | 7.5%         | 8.8%  | 8.4%  | 11.7% | 10.0%                    | 11.3% | 10.9% | 14.1% |
| 37 Microsoft Corp.      | 2.26%    | 12.5%        | 11.3% | 11.7% | 15.3% | 14.8%                    | 13.6% | 14.0% | 17.5% |
| 38 NIKE, Inc. 'B'       | 1.49%    | 9.5%         | 10.9% | 12.5% | 12.2% | 11.0%                    | 12.4% | 14.0% | 13.7% |
| 39 Northrop Grumman     | 2.82%    | 12.5%        | 11.0% | 11.1% | 7.9%  | 15.3%                    | 13.8% | 13.9% | 10.7% |
| 40 PepsiCo, Inc.        | 2.91%    | 11.0%        | 8.9%  | 9.5%  | 14.5% | 13.9%                    | 11.8% | 12.4% | 17.4% |
| 41 Pfizer, Inc.         | 4.50%    | 5.0%         | 2.8%  | 3.5%  | 7.0%  | 9.5%                     | 7.3%  | 8.0%  | 11.5% |
| 42 Procter & Gamble     | 3.01%    | 8.0%         | 8.9%  | 9.2%  | 7.2%  | 11.0%                    | 11.9% | 12.2% | 10.3% |
| 43 Raytheon Co.         | 3.02%    | 10.0%        | 8.0%  | 10.0% | 8.6%  | 13.0%                    | 11.0% | 13.0% | 11.6% |
| 44 Stryker Corp.        | 1.26%    | 12.5%        | 10.9% | 11.4% | 13.6% | 13.8%                    | 12.2% | 12.7% | 14.9% |
| 45 Sysco Corp.          | 3.47%    | 8.0%         | 10.0% | 9.7%  | 14.2% | 11.5%                    | 13.5% | 13.2% | 17.6% |
| 46 TJX Companies        | 1.28%    | 13.5%        | 14.5% | 14.4% | 11.1% | 14.8%                    | 15.8% | 15.7% | 12.4% |
| 47 United Parcel Serv.  | 2.59%    | 9.0%         | 11.7% | 11.5% | 17.9% | 11.6%                    | 14.3% | 14.1% | 20.5% |
| 48 Verizon Communic.    | 5.63%    | 4.0%         | 6.2%  | 14.9% | 5.7%  | 9.6%                     | 11.8% | 20.5% | 11.3% |
| 49 Walgreen Co.         | 1.68%    | 11.5%        | 13.4% | 13.0% | 8.4%  | 13.2%                    | 15.1% | 14.7% | 10.1% |
| 50 Wal-Mart Stores      | 2.16%    | 10.0%        | 10.7% | 11.3% | 9.9%  | 12.2%                    | 12.9% | 13.5% | 12.1% |
| 51 Waste Management     | 3.52%    | 5.5%         | 9.6%  | 11.0% | 5.2%  | 9.0%                     | 13.1% | 14.5% | 8.7%  |
| Average (f)             |          |              |       |       |       | 12.0%                    | 12.4% | 12.5% | 12.1% |

(a) www.valueline.com (retrieved Jan. 28, 2011).

(b) Thomson Reuters Company in Context Report (Jan. 28, 2011).

(c) www.zacks.com (retrieved Jan. 31, 2011).

(d) See Schedule 5.

(e) Sum of dividend yield and respective growth rate.

(f) Excludes highlighted figures.

NON-UTILITY PROXY GROUP

|                         |         | (a)    | (a)     | (a)   |       | (b)     | (c)    |       | (d)         | (e)    |         |       |
|-------------------------|---------|--------|---------|-------|-------|---------|--------|-------|-------------|--------|---------|-------|
|                         |         | 2014   |         |       |       | Adjust. |        |       | "sv" Factor |        |         |       |
| Company                 | EPS     | DPS    | BVPS    | b     | r     | Factor  | Adj. r | br    | s           | v      | br + sv |       |
| 1 3M Company            | \$7.60  | \$3.10 | \$40.05 | 59.2% | 19.0% | 1.0818  | 20.5%  | 12.2% | 0.0106      | 0.6731 | 0.71%   | 12.9% |
| 2 Abbott Labs.          | \$5.70  | \$2.18 | \$22.05 | 61.8% | 25.9% | 1.0384  | 26.8%  | 16.6% | (0.0197)    | 0.7900 | -1.54%  | 15.0% |
| 3 Alberto-Culver        | \$2.35  | \$0.55 | \$17.85 | 76.6% | 13.2% | 1.0315  | 13.6%  | 10.4% | (0.0330)    | 0.6033 | -1.99%  | 8.4%  |
| 4 AT&T Inc.             | \$3.25  | \$2.00 | \$24.05 | 38.5% | 13.5% | 1.0327  | 14.0%  | 5.4%  | (0.0001)    | 0.4656 | -0.01%  | 5.4%  |
| 5 Automatic Data Proc.  | \$3.45  | \$1.60 | \$22.95 | 53.6% | 15.0% | 1.0786  | 16.2%  | 8.7%  | 0.0111      | 0.7039 | 0.78%   | 9.5%  |
| 6 Bard (C.R.)           | \$7.75  | \$0.85 | \$31.45 | 89.0% | 24.6% | 1.0255  | 25.3%  | 22.5% | (0.0564)    | 0.7754 | -4.37%  | 18.1% |
| 7 Baxter Int'l Inc.     | \$5.85  | \$1.50 | \$22.90 | 74.4% | 25.5% | 1.0560  | 27.0%  | 20.1% | (0.0633)    | 0.7224 | -4.57%  | 15.5% |
| 8 Becton, Dickinson     | \$7.65  | \$2.20 | \$34.10 | 71.2% | 22.4% | 1.0306  | 23.1%  | 16.5% | (0.1030)    | 0.7216 | -7.43%  | 9.0%  |
| 9 Bristol-Myers Squibb  | \$2.35  | \$1.54 | \$11.65 | 34.5% | 20.2% | 1.0263  | 20.7%  | 7.1%  | (0.0212)    | 0.6671 | -1.42%  | 5.7%  |
| 10 Brown-Forman 'B'     | \$4.50  | \$1.48 | \$20.40 | 67.1% | 22.1% | 1.0372  | 22.9%  | 15.4% | (0.0640)    | 0.7368 | -4.71%  | 10.6% |
| 11 Chubb Corp.          | \$7.00  | \$1.60 | \$64.85 | 77.1% | 10.8% | 1.0184  | 11.0%  | 8.5%  | (0.0319)    | 0.1632 | -0.52%  | 8.0%  |
| 12 Church & Dwight      | \$5.80  | \$1.00 | \$39.25 | 82.8% | 14.8% | 1.0465  | 15.5%  | 12.8% | (0.0414)    | 0.6075 | -2.52%  | 10.3% |
| 13 Coca-Cola            | \$4.95  | \$2.48 | \$18.20 | 49.9% | 27.2% | 1.0479  | 28.5%  | 14.2% | (0.0526)    | 0.8267 | -4.34%  | 9.9%  |
| 14 Colgate-Palmolive    | \$7.20  | \$3.20 | \$13.25 | 55.6% | 54.3% | 1.0671  | 58.0%  | 32.2% | (0.1557)    | 0.9086 | -14.15% | 18.1% |
| 15 Commerce Bancshs.    | \$3.35  | \$1.15 | \$32.10 | 65.7% | 10.4% | 1.0480  | 10.9%  | 7.2%  | 0.0240      | 0.2867 | 0.69%   | 7.9%  |
| 16 ConAgra Foods        | \$2.35  | \$1.00 | \$15.00 | 57.4% | 15.7% | 1.0288  | 16.1%  | 9.3%  | (0.0217)    | 0.5385 | -1.17%  | 8.1%  |
| 17 Costco Wholesale     | \$4.20  | \$0.95 | \$33.50 | 77.4% | 12.5% | 1.0315  | 12.9%  | 10.0% | (0.0301)    | 0.5939 | -1.79%  | 8.2%  |
| 18 Cullen/Frost Bankers | \$4.35  | \$2.10 | \$44.00 | 51.7% | 9.9%  | 1.0382  | 10.3%  | 5.3%  | 0.0132      | 0.2667 | 0.33%   | 5.7%  |
| 19 CVS Caremark Corp.   | \$4.00  | \$0.56 | \$38.15 | 86.0% | 10.5% | 1.0268  | 10.8%  | 9.3%  | (0.0395)    | 0.3642 | -1.44%  | 7.8%  |
| 20 Ecolab Inc.          | \$3.60  | \$0.85 | \$14.45 | 76.4% | 24.9% | 1.0530  | 26.2%  | 20.0% | (0.0056)    | 0.7592 | -0.43%  | 19.6% |
| 21 Exxon Mobil Corp.    | \$9.35  | \$2.05 | \$45.50 | 78.1% | 20.5% | 1.0546  | 21.7%  | 16.9% | (0.0578)    | 0.5956 | -3.44%  | 13.5% |
| 22 Gen'l Mills          | \$3.15  | \$1.36 | \$11.95 | 56.8% | 26.4% | 1.0318  | 27.2%  | 15.5% | (0.0809)    | 0.7610 | -6.16%  | 9.3%  |
| 23 Heinz (H.J.)         | \$4.10  | \$2.32 | \$14.65 | 43.4% | 28.0% | 1.0908  | 30.5%  | 13.3% | 0.0085      | 0.7830 | 0.66%   | 13.9% |
| 24 Hormel Foods         | \$2.10  | \$0.70 | \$13.55 | 66.7% | 15.5% | 1.0527  | 16.3%  | 10.9% | (0.0025)    | 0.6387 | -0.16%  | 10.7% |
| 25 Int'l Business Mach. | \$18.00 | \$3.60 | \$48.75 | 80.0% | 36.9% | 1.0856  | 40.1%  | 32.1% | (0.1501)    | 0.7759 | -11.65% | 20.4% |
| 26 Johnson & Johnson    | \$5.85  | \$2.65 | \$27.60 | 54.7% | 21.2% | 1.0378  | 22.0%  | 12.0% | (0.0185)    | 0.6846 | -1.26%  | 10.8% |
| 27 Kellogg              | \$5.10  | \$1.88 | \$9.95  | 63.1% | 51.3% | 1.0352  | 53.1%  | 33.5% | (0.2690)    | 0.8829 | -23.75% | 9.7%  |
| 28 Kimberly-Clark       | \$6.25  | \$2.75 | \$15.55 | 56.0% | 40.2% | 1.0140  | 40.8%  | 22.8% | (0.0506)    | 0.8363 | -4.24%  | 18.6% |
| 29 Kraft Foods          | \$3.00  | \$1.40 | \$24.00 | 53.3% | 12.5% | 1.0480  | 13.1%  | 7.0%  | 0.0716      | 0.5200 | 3.72%   | 10.7% |
| 30 Lilly (Eli)          | \$3.40  | \$2.20 | \$15.60 | 35.3% | 21.8% | 1.0636  | 23.2%  | 8.2%  | 0.0032      | 0.6716 | 0.21%   | 8.4%  |
| 31 Lockheed Martin      | \$13.25 | \$3.50 | \$31.25 | 73.6% | 42.4% | 1.0882  | 46.1%  | 34.0% | (0.1663)    | 0.8188 | -13.62% | 20.3% |
| 32 Lorillard Inc.       | \$9.85  | \$5.80 | \$11.10 | 41.1% | 88.7% | 1.2773  | 113.3% | 46.6% | (0.3852)    | 0.9260 | -35.67% | 10.9% |
| 33 McCormick & Co.      | \$3.50  | \$1.36 | \$18.95 | 61.1% | 18.5% | 1.0649  | 19.7%  | 12.0% | 0.0178      | 0.7293 | 1.30%   | 13.3% |
| 34 McDonald's Corp.     | \$6.05  | \$3.00 | \$19.00 | 50.4% | 31.8% | 1.0303  | 32.8%  | 16.5% | (0.0734)    | 0.8000 | -5.87%  | 10.7% |
| 35 McKesson Corp.       | \$6.80  | \$0.72 | \$46.65 | 89.4% | 14.6% | 1.0421  | 15.2%  | 13.6% | (0.0380)    | 0.4957 | -1.88%  | 11.7% |
| 36 Medtronic, Inc.      | \$4.50  | \$1.18 | \$25.95 | 73.8% | 17.3% | 1.0597  | 18.4%  | 13.6% | (0.0326)    | 0.5848 | -1.91%  | 11.7% |
| 37 Microsoft Corp.      | \$3.35  | \$0.96 | \$10.75 | 71.3% | 31.2% | 1.0763  | 33.5%  | 23.9% | (0.1104)    | 0.7850 | -8.66%  | 15.3% |
| 38 NIKE, Inc. 'B'       | \$5.65  | \$1.50 | \$34.60 | 73.5% | 16.3% | 1.0643  | 17.4%  | 12.8% | (0.0085)    | 0.6358 | -0.54%  | 12.2% |
| 39 Northrop Grumman     | \$10.25 | \$2.50 | \$68.00 | 75.6% | 15.1% | 1.0293  | 15.5%  | 11.7% | (0.0783)    | 0.4868 | -3.81%  | 7.9%  |
| 40 PepsiCo, Inc.        | \$6.40  | \$2.34 | \$24.00 | 63.4% | 26.7% | 1.0724  | 28.6%  | 18.1% | (0.0449)    | 0.8118 | -3.64%  | 14.5% |
| 41 Pfizer, Inc.         | \$2.05  | \$1.16 | \$13.00 | 43.4% | 15.8% | 1.0154  | 16.0%  | 7.0%  | -           | 0.5273 | 0.00%   | 7.0%  |
| 42 Procter & Gamble     | \$5.25  | \$2.18 | \$29.45 | 58.5% | 17.8% | 1.0230  | 18.2%  | 10.7% | (0.0495)    | 0.6900 | -3.41%  | 7.2%  |
| 43 Raytheon Co.         | \$7.20  | \$2.00 | \$38.65 | 72.2% | 18.6% | 1.0231  | 19.1%  | 13.8% | (0.0870)    | 0.5932 | -5.16%  | 8.6%  |
| 44 Stryker Corp.        | \$5.35  | \$0.84 | \$32.75 | 84.3% | 16.3% | 1.0660  | 17.4%  | 14.7% | (0.0144)    | 0.7213 | -1.04%  | 13.6% |
| 45 Sysco Corp.          | \$2.75  | \$1.10 | \$10.10 | 60.0% | 27.2% | 1.0502  | 28.6%  | 17.2% | (0.0385)    | 0.7756 | -2.98%  | 14.2% |
| 46 TJX Companies        | \$4.80  | \$0.80 | \$12.75 | 83.3% | 37.6% | 1.0374  | 39.1%  | 32.5% | (0.2565)    | 0.8355 | -21.43% | 11.1% |
| 47 United Parcel Serv.  | \$5.50  | \$2.20 | \$19.30 | 60.0% | 28.5% | 1.0912  | 31.1%  | 18.7% | (0.0090)    | 0.8245 | -0.75%  | 17.9% |
| 48 Verizon Communic.    | \$3.05  | \$1.96 | \$18.95 | 35.7% | 16.1% | 1.0250  | 16.5%  | 5.9%  | (0.0032)    | 0.6555 | -0.21%  | 5.7%  |
| 49 Walgreen Co.         | \$3.65  | \$1.00 | \$21.15 | 72.6% | 17.3% | 1.0252  | 17.7%  | 12.8% | (0.0684)    | 0.6475 | -4.43%  | 8.4%  |
| 50 Wal-Mart Stores      | \$6.05  | \$1.75 | \$23.40 | 71.1% | 25.9% | 1.0072  | 26.0%  | 18.5% | (0.1157)    | 0.7400 | -8.56%  | 9.9%  |
| 51 Waste Management     | \$2.90  | \$1.60 | \$15.30 | 44.8% | 19.0% | 1.0079  | 19.1%  | 8.6%  | (0.0515)    | 0.6600 | -3.40%  | 5.2%  |

NON-UTILITY PROXY GROUP

|                         | (a)           | (a)       | (f)   | (a)        | (a)      |          | (g)    | (a)           | (a)      | (f)    |
|-------------------------|---------------|-----------|-------|------------|----------|----------|--------|---------------|----------|--------|
|                         | Common Equity |           |       | 2014 Price |          |          |        | Common Shares |          |        |
| Company                 | 2009          | 2014      | Chg.  | High       | Low      | Avg.     | M/B    | 2009          | 2014     | Growth |
| 1 3M Company            | \$12,764      | \$28,975  | 17.8% | \$135.00   | \$110.00 | \$122.50 | 3.059  | 710.60        | 723.00   | 0.35%  |
| 2 Abbott Labs.          | \$22,856      | \$33,550  | 8.0%  | \$115.00   | \$95.00  | \$105.00 | 4.762  | 1,551.90      | 1,520.00 | -0.41% |
| 3 Alberto-Culver        | \$1,197       | \$1,640   | 6.5%  | \$50.00    | \$40.00  | \$45.00  | 2.521  | 98.26         | 92.00    | -1.31% |
| 4 AT&T Inc.             | \$102,339     | \$141,895 | 6.8%  | \$50.00    | \$40.00  | \$45.00  | 1.871  | 5,901.90      | 5,900.00 | -0.01% |
| 5 Automatic Data Proc.  | \$5,323       | \$11,700  | 17.1% | \$85.00    | \$70.00  | \$77.50  | 3.377  | 501.70        | 510.00   | 0.33%  |
| 6 Bard (C.R.)           | \$2,194       | \$2,830   | 5.2%  | \$155.00   | \$125.00 | \$140.00 | 4.452  | 95.92         | 90.00    | -1.27% |
| 7 Baxter Int'l Inc.     | \$7,191       | \$12,600  | 11.9% | \$90.00    | \$75.00  | \$82.50  | 3.603  | 600.97        | 550.00   | -1.76% |
| 8 Becton, Dickinson     | \$5,143       | \$6,985   | 6.3%  | \$135.00   | \$110.00 | \$122.50 | 3.592  | 237.08        | 205.00   | -2.87% |
| 9 Bristol-Myers Squibb  | \$14,785      | \$19,230  | 5.4%  | \$40.00    | \$30.00  | \$35.00  | 3.004  | 1,709.50      | 1,650.00 | -0.71% |
| 10 Brown-Forman 'B'     | \$1,895       | \$2,750   | 7.7%  | \$85.00    | \$70.00  | \$77.50  | 3.799  | 146.96        | 135.00   | -1.68% |
| 11 Chubb Corp.          | \$15,634      | \$18,800  | 3.8%  | \$85.00    | \$70.00  | \$77.50  | 1.195  | 332.01        | 290.00   | -2.67% |
| 12 Church & Dwight      | \$1,602       | \$2,550   | 9.7%  | \$110.00   | \$90.00  | \$100.00 | 2.548  | 70.55         | 65.00    | -1.63% |
| 13 Coca-Cola            | \$24,799      | \$40,035  | 10.1% | \$115.00   | \$95.00  | \$105.00 | 5.769  | 2,303.00      | 2,200.00 | -0.91% |
| 14 Colgate-Palmolive    | \$3,116       | \$6,100   | 14.4% | \$160.00   | \$130.00 | \$145.00 | 10.943 | 494.17        | 460.00   | -1.42% |
| 15 Commerce Bancshs.    | \$1,886       | \$3,050   | 10.1% | \$50.00    | \$40.00  | \$45.00  | 1.402  | 87.26         | 95.00    | 1.71%  |
| 16 ConAgra Foods        | \$4,721       | \$6,300   | 5.9%  | \$35.00    | \$30.00  | \$32.50  | 2.167  | 441.66        | 420.00   | -1.00% |
| 17 Costco Wholesale     | \$10,018      | \$13,725  | 6.5%  | \$90.00    | \$75.00  | \$82.50  | 2.463  | 435.97        | 410.00   | -1.22% |
| 18 Cullen/Frost Bankers | \$1,894       | \$2,775   | 7.9%  | \$65.00    | \$55.00  | \$60.00  | 1.364  | 60.04         | 63.00    | 0.97%  |
| 19 CVS Caremark Corp.   | \$35,768      | \$46,750  | 5.5%  | \$65.00    | \$55.00  | \$60.00  | 1.573  | 1,391.00      | 1,225.00 | -2.51% |
| 20 Ecolab Inc.          | \$2,001       | \$3,400   | 11.2% | \$65.00    | \$55.00  | \$60.00  | 4.152  | 236.60        | 235.00   | -0.14% |
| 21 Exxon Mobil Corp.    | \$110,569     | \$191,000 | 11.6% | \$125.00   | \$100.00 | \$112.50 | 2.473  | 4,727.00      | 4,200.00 | -2.34% |
| 22 Gen'l Mills          | \$5,175       | \$7,115   | 6.6%  | \$55.00    | \$45.00  | \$50.00  | 4.184  | 656.00        | 595.00   | -1.93% |
| 23 Heinz (H.J.)         | \$1,891       | \$4,700   | 20.0% | \$75.00    | \$60.00  | \$67.50  | 4.608  | 318.06        | 321.00   | 0.18%  |
| 24 Hormel Foods         | \$2,124       | \$3,600   | 11.1% | \$40.00    | \$35.00  | \$37.50  | 2.768  | 267.19        | 266.00   | -0.09% |
| 25 Int'l Business Mach. | \$22,755      | \$53,650  | 18.7% | \$240.00   | \$195.00 | \$217.50 | 4.462  | 1,305.30      | 1,100.00 | -3.36% |
| 26 Johnson & Johnson    | \$50,588      | \$73,850  | 7.9%  | \$95.00    | \$80.00  | \$87.50  | 3.170  | 2,754.30      | 2,675.00 | -0.58% |
| 27 Kellogg              | \$2,272       | \$3,230   | 7.3%  | \$95.00    | \$75.00  | \$85.00  | 8.543  | 381.38        | 325.00   | -3.15% |
| 28 Kimberly-Clark       | \$5,406       | \$6,220   | 2.8%  | \$105.00   | \$85.00  | \$95.00  | 6.109  | 417.00        | 400.00   | -0.83% |
| 29 Kraft Foods          | \$25,972      | \$42,000  | 10.1% | \$55.00    | \$45.00  | \$50.00  | 2.083  | 1,477.90      | 1,750.00 | 3.44%  |
| 30 Lilly (Eli)          | \$9,524       | \$18,000  | 13.6% | \$50.00    | \$45.00  | \$47.50  | 3.045  | 1,149.00      | 1,155.00 | 0.10%  |
| 31 Lockheed Martin      | \$4,129       | \$10,000  | 19.4% | \$190.00   | \$155.00 | \$172.50 | 5.520  | 372.90        | 320.00   | -3.01% |
| 32 Lorillard Inc.       | \$87          | \$1,500   | 76.7% | \$165.00   | \$135.00 | \$150.00 | 13.514 | 156.00        | 135.00   | -2.85% |
| 33 McCormick & Co.      | \$1,335       | \$2,555   | 13.9% | \$75.00    | \$65.00  | \$70.00  | 3.694  | 131.80        | 135.00   | 0.48%  |
| 34 McDonald's Corp.     | \$14,034      | \$19,000  | 6.2%  | \$105.00   | \$85.00  | \$95.00  | 5.000  | 1,076.70      | 1,000.00 | -1.47% |
| 35 McKesson Corp.       | \$7,532       | \$11,480  | 8.8%  | \$100.00   | \$85.00  | \$92.50  | 1.983  | 271.00        | 246.00   | -1.92% |
| 36 Medtronic, Inc.      | \$14,629      | \$26,600  | 12.7% | \$70.00    | \$55.00  | \$62.50  | 2.408  | 1,097.30      | 1,025.00 | -1.35% |
| 37 Microsoft Corp.      | \$39,558      | \$85,000  | 16.5% | \$55.00    | \$45.00  | \$50.00  | 4.651  | 8,908.00      | 7,900.00 | -2.37% |
| 38 NIKE, Inc. 'B'       | \$8,693       | \$16,550  | 13.7% | \$105.00   | \$85.00  | \$95.00  | 2.746  | 485.50        | 478.00   | -0.31% |
| 39 Northrop Grumman     | \$12,687      | \$17,000  | 6.0%  | \$145.00   | \$120.00 | \$132.50 | 1.949  | 306.87        | 250.00   | -4.02% |
| 40 PepsiCo, Inc.        | \$17,442      | \$36,015  | 15.6% | \$140.00   | \$115.00 | \$127.50 | 5.313  | 1,565.00      | 1,500.00 | -0.84% |
| 41 Pfizer, Inc.         | \$90,014      | \$105,000 | 3.1%  | \$30.00    | \$25.00  | \$27.50  | 2.115  | 8,070.00      | 8,070.00 | 0.00%  |
| 42 Procter & Gamble     | \$63,099      | \$79,455  | 4.7%  | \$105.00   | \$85.00  | \$95.00  | 3.226  | 2,917.00      | 2,700.00 | -1.53% |
| 43 Raytheon Co.         | \$9,827       | \$12,375  | 4.7%  | \$105.00   | \$85.00  | \$95.00  | 2.458  | 383.20        | 320.00   | -3.54% |
| 44 Stryker Corp.        | \$6,595       | \$12,775  | 14.1% | \$130.00   | \$105.00 | \$117.50 | 3.588  | 397.90        | 390.00   | -0.40% |
| 45 Sysco Corp.          | \$3,450       | \$5,700   | 10.6% | \$50.00    | \$40.00  | \$45.00  | 4.455  | 590.03        | 565.00   | -0.86% |
| 46 TJX Companies        | \$2,889       | \$4,200   | 7.8%  | \$85.00    | \$70.00  | \$77.50  | 6.078  | 409.39        | 330.00   | -4.22% |
| 47 United Parcel Serv.  | \$7,630       | \$19,035  | 20.1% | \$120.00   | \$100.00 | \$110.00 | 5.699  | 992.85        | 985.00   | -0.16% |
| 48 Verizon Communic.    | \$41,600      | \$53,439  | 5.1%  | \$60.00    | \$50.00  | \$55.00  | 2.902  | 2,835.70      | 2,820.00 | -0.11% |
| 49 Walgreen Co.         | \$14,376      | \$18,500  | 5.2%  | \$65.00    | \$55.00  | \$60.00  | 2.837  | 988.56        | 875.00   | -2.41% |
| 50 Wal-Mart Stores      | \$70,749      | \$76,025  | 1.4%  | \$100.00   | \$80.00  | \$90.00  | 3.846  | 3,786.00      | 3,250.00 | -3.01% |
| 51 Waste Management     | \$6,285       | \$6,800   | 1.6%  | \$50.00    | \$40.00  | \$45.00  | 2.941  | 486.12        | 445.00   | -1.75% |

(a) www.valueline.com (retrieved Jan. 28, 2011).

(b) Computed using the formula  $2^{*}(1+5\text{-Yr. Change in Equity})/(2+5\text{ Yr. Change in Equity})$ .

(c) Product of year-end "r" for 2014 and Adjustment Factor.

(d) Product of change in common shares outstanding and M/B Ratio.

(e) Computed as  $1 - \text{B/M Ratio}$ .

(f) Five-year rate of change.

(g) Average of High and Low expected market prices divided by 2013-15 BVPS.

## CAPITAL ASSET PRICING MODEL

Exhibit WEA-6

Page 1 of 1

### UTILITY PROXY GROUP

#### Market Rate of Return

|                    |              |       |
|--------------------|--------------|-------|
| Dividend Yield (a) | 2.5%         |       |
| Growth Rate (b)    | <u>10.6%</u> |       |
| Market Return (c)  |              | 13.1% |

#### Less: Risk-Free Rate (d)

|                               |             |  |
|-------------------------------|-------------|--|
| Long-term Treasury Bond Yield | <u>4.5%</u> |  |
|-------------------------------|-------------|--|

|                                |      |  |
|--------------------------------|------|--|
| <u>Market Risk Premium (e)</u> | 8.6% |  |
|--------------------------------|------|--|

|                                     |             |  |
|-------------------------------------|-------------|--|
| <u>Utility Proxy Group Beta (f)</u> | <u>0.74</u> |  |
|-------------------------------------|-------------|--|

|                                             |      |  |
|---------------------------------------------|------|--|
| <u>Utility Proxy Group Risk Premium (g)</u> | 6.3% |  |
|---------------------------------------------|------|--|

#### Plus: Risk-free Rate (d)

|                               |             |  |
|-------------------------------|-------------|--|
| Long-term Treasury Bond Yield | <u>4.5%</u> |  |
|-------------------------------|-------------|--|

|                     |       |  |
|---------------------|-------|--|
| Unadjusted CAPM (h) | 10.8% |  |
|---------------------|-------|--|

|                     |             |  |
|---------------------|-------------|--|
| Size Adjustment (i) | <u>0.7%</u> |  |
|---------------------|-------------|--|

|                                   |                     |  |
|-----------------------------------|---------------------|--|
| <b>Implied Cost of Equity (j)</b> | <u><u>11.6%</u></u> |  |
|-----------------------------------|---------------------|--|

- (a) Weighted average dividend yield for the dividend paying firms in the S&P 500 from [www.valueline.com](http://www.valueline.com) (retrieved Nov. 5, 2010).
- (b) Weighted average of IBES earnings growth rates for the dividend paying firms in the S&P 500 (retrieved Nov. 10, 2010).
- (c) (a) + (b)
- (d) Average yield on 30-year Treasury bonds for January 2011 from the Federal Reserve Board at [http://www.federalreserve.gov/releases/h15/data/Monthly/H15\\_TCMNOM\\_Y20.txt](http://www.federalreserve.gov/releases/h15/data/Monthly/H15_TCMNOM_Y20.txt).
- (e) (c) - (d).
- (f) The Value Line Investment Survey (Nov. 26, & Dec. 24, 2010, Feb. 4, 2011).
- (g) (e) x (f).
- (h) (d) + (g).
- (i) *Morningstar*, "Ibbotson SBBI 2010 Valuation Yearbook," at Table C-1 (2010).
- (j) (h) + (i).

## CAPITAL ASSET PRICING MODEL

Exhibit WEA-7

Page 1 of 1

### NON-UTILITY PROXY GROUP

#### Market Rate of Return

|                    |              |       |
|--------------------|--------------|-------|
| Dividend Yield (a) | 2.5%         |       |
| Growth Rate (b)    | <u>10.6%</u> |       |
| Market Return (c)  |              | 13.1% |

#### Less: Risk-Free Rate (d)

|                               |             |  |
|-------------------------------|-------------|--|
| Long-term Treasury Bond Yield | <u>4.5%</u> |  |
|-------------------------------|-------------|--|

|                                |      |  |
|--------------------------------|------|--|
| <u>Market Risk Premium (e)</u> | 8.6% |  |
|--------------------------------|------|--|

|                                         |             |  |
|-----------------------------------------|-------------|--|
| <u>Non-Utility Proxy Group Beta (f)</u> | <u>0.70</u> |  |
|-----------------------------------------|-------------|--|

|                                             |      |  |
|---------------------------------------------|------|--|
| <u>Utility Proxy Group Risk Premium (g)</u> | 6.1% |  |
|---------------------------------------------|------|--|

#### Plus: Risk-free Rate (d)

|                               |             |  |
|-------------------------------|-------------|--|
| Long-term Treasury Bond Yield | <u>4.5%</u> |  |
|-------------------------------|-------------|--|

|                     |       |  |
|---------------------|-------|--|
| Unadjusted CAPM (h) | 10.6% |  |
|---------------------|-------|--|

|                     |              |  |
|---------------------|--------------|--|
| Size Adjustment (i) | <u>-0.4%</u> |  |
|---------------------|--------------|--|

|                                   |                     |  |
|-----------------------------------|---------------------|--|
| <b>Implied Cost of Equity (j)</b> | <u><u>10.2%</u></u> |  |
|-----------------------------------|---------------------|--|

- (a) Weighted average dividend yield for the dividend paying firms in the S&P 500 from [www.valueline.com](http://www.valueline.com) (retrieved Nov. 5, 2010).
- (b) Weighted average of IBES earnings growth rates for the dividend paying firms in the S&P 500 (retrieved Nov. 10, 2010).
- (c) (a) + (b)
- (d) Average yield on 30-year Treasury bonds for January 2011 from the Federal Reserve Board at [http://www.federalreserve.gov/releases/h15/data/Monthly/H15\\_TCMNOM\\_Y20.txt](http://www.federalreserve.gov/releases/h15/data/Monthly/H15_TCMNOM_Y20.txt).
- (e) (c) - (d).
- (f) [www.valueline.com](http://www.valueline.com) (retrieved Oct. 29, 2010).
- (g) (e) x (f).
- (h) (d) + (g).
- (i) *Morningstar*, "Ibbotson SBBI 2010 Valuation Yearbook," at Table C-1 (2010).
- (j) (h) + (i).

# EXPECTED EARNINGS APPROACH

Exhibit WEA-8

Page 1 of 1

## UTILITY PROXY GROUP

|                           | (a)                                         | (b)                          | (c)                                         |
|---------------------------|---------------------------------------------|------------------------------|---------------------------------------------|
| <u>Company</u>            | <u>Expected Return<br/>on Common Equity</u> | <u>Adjustment<br/>Factor</u> | <u>Adjusted Return<br/>on Common Equity</u> |
| 1 Alliant Energy          | 12.0%                                       | 1.0246                       | 12.3%                                       |
| 2 Ameren Corp.            | 7.0%                                        | 1.0144                       | 7.1%                                        |
| 3 American Elec Pwr       | 10.5%                                       | 1.0262                       | 10.8%                                       |
| 4 Cleco Corp.             | 10.5%                                       | 1.0412                       | 10.9%                                       |
| 5 Constellation Energy    | 7.0%                                        | 1.0075                       | 7.1%                                        |
| 6 DTE Energy Co.          | 9.0%                                        | 1.0250                       | 9.2%                                        |
| 7 Entergy Corp.           | 11.5%                                       | 1.0182                       | 11.7%                                       |
| 8 Exelon Corp.            | 14.0%                                       | 1.0240                       | 14.3%                                       |
| 9 Great Plains Energy     | 7.5%                                        | 1.0251                       | 7.7%                                        |
| 10 Hawaiian Elec.         | 10.5%                                       | 1.0220                       | 10.7%                                       |
| 11 IDACORP, Inc.          | 8.5%                                        | 1.0303                       | 8.8%                                        |
| 12 Integrys Energy Group  | 10.0%                                       | 1.0134                       | 10.1%                                       |
| 13 OGE Energy Corp.       | 12.5%                                       | 1.0386                       | 13.0%                                       |
| 14 PG&E Corp.             | 12.0%                                       | 1.0384                       | 12.5%                                       |
| 15 Pinnacle West Capital  | 8.5%                                        | 1.0339                       | 8.8%                                        |
| 16 Portland General Elec. | 8.5%                                        | 1.0327                       | 8.8%                                        |
| 17 PPL Corp.              | 11.5%                                       | 1.0816                       | 12.4%                                       |
| 18 Pub Sv Enterprise Grp  | 12.5%                                       | 1.0398                       | 13.0%                                       |
| 19 SCANA Corp.            | 10.0%                                       | 1.0418                       | 10.4%                                       |
| 20 Semptra Energy         | 10.5%                                       | 1.0230                       | 10.7%                                       |
| 21 Westar Energy          | 10.0%                                       | 1.0281                       | 10.3%                                       |
| 22 Wisconsin Energy       | 13.0%                                       | 1.0277                       | 13.4%                                       |
| <b>Average (d)</b>        |                                             |                              | <b>11.0%</b>                                |

(a) 3-5 year projections from The Value Line Investment Survey (Nov. 26 & Dec. 24, 2010, Feb. 4, 2011).

(b) Adjustment to convert year-end "r" to an average rate of return from Schedule 3.

(c) (a) x (b).

(d) Excludes highlighted figures.



# **FLOTATION COST ADJUSTMENT FACTOR**

Exhibit WEA-9

Page 1 of 1

## **PUCO STAFF**

|                                               | <u>\$ Millions</u> |
|-----------------------------------------------|--------------------|
| (1) Retained Earnings <sup>1</sup>            | \$ 4,451           |
| (2) Total Common Equity <sup>1</sup>          | \$ 13,140          |
| (3) Ratio of (1) to (2)                       | 0.33874            |
| (4) Issuance Cost Percentage (f) <sup>2</sup> | 3.02%              |
| (5) External Equity Ratio (w) [1.0 - (3)]     | 0.66126            |
| (6) Net Adjustment Factor [w/(1-f) + (1-w)]   | 1.02059            |

<sup>1</sup> American Electric Power Co., Consolidated Balance Sheet at Dec. 31, 2009, 2009 Form 10-K Report .

<sup>2</sup> American Electric Power Company, Inc., *Prospectus Supplement (To Prospectus dated December 22, 2008)* (Apr. 1, 2009).

# CAPITAL STRUCTURE

Exhibit WEA-10  
Page 1 of 1

## UTILITY PROXY GROUP

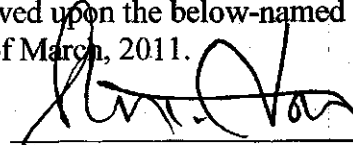
| Company                   | At Fiscal Year-End 2009 (a) |             |              | Value Line Projected (b) |             |              |
|---------------------------|-----------------------------|-------------|--------------|--------------------------|-------------|--------------|
|                           | Long-term                   |             | Common       | Long-term                |             | Common       |
|                           | Debt                        | Preferred   | Equity       | Debt                     | Other       | Equity       |
| 1 Alliant Energy          | 45.4%                       | 4.4%        | 50.2%        | 45.0%                    | 3.5%        | 51.5%        |
| 2 Ameren Corp.            | 47.6%                       | 0.0%        | 52.4%        | 47.5%                    | 1.0%        | 51.5%        |
| 3 American Elec Pwr       | 57.0%                       | 0.2%        | 42.8%        | 52.0%                    | 0.0%        | 48.0%        |
| 4 Cleco Corp.             | 54.4%                       | 0.0%        | 45.6%        | 46.5%                    | 0.0%        | 53.5%        |
| 5 Constellation Energy    | 35.2%                       | 1.4%        | 63.4%        | 32.0%                    | 1.0%        | 67.0%        |
| 6 DTE Energy Co.          | 51.1%                       | 2.1%        | 46.7%        | 52.0%                    | 0.0%        | 48.0%        |
| 7 Entergy Corp.           | 56.1%                       | 1.5%        | 42.3%        | 58.0%                    | 1.0%        | 41.0%        |
| 8 Exelon Corp.            | 47.8%                       | 0.4%        | 51.9%        | 45.0%                    | 0.0%        | 55.0%        |
| 9 Great Plains Energy     | 53.2%                       | 0.6%        | 46.2%        | 53.5%                    | 0.5%        | 46.0%        |
| 10 Hawaiian Elec.         | 48.0%                       | 1.2%        | 50.7%        | 47.0%                    | 1.0%        | 52.0%        |
| 11 IDACORP, Inc.          | 50.3%                       | 0.0%        | 49.7%        | 49.5%                    | 0.0%        | 50.5%        |
| 12 Integrys Energy Group  | 46.3%                       | 0.9%        | 52.7%        | 46.5%                    | 1.0%        | 52.5%        |
| 13 OGE Energy Corp.       | 53.6%                       | 0.0%        | 46.4%        | 51.0%                    | 0.0%        | 49.0%        |
| 14 PG&E Corp.             | 50.3%                       | 1.2%        | 48.5%        | 45.0%                    | 1.0%        | 54.0%        |
| 15 Pinnacle West Capital  | 52.2%                       | 0.0%        | 47.8%        | 46.5%                    | 0.0%        | 53.5%        |
| 16 Portland General Elec. | 53.1%                       | 0.0%        | 46.9%        | 50.0%                    | 0.0%        | 50.0%        |
| 17 PPL Corp.              | 55.1%                       | 0.0%        | 44.9%        | 45.5%                    | 1.0%        | 53.5%        |
| 18 Pub Sv Enterprise Grp  | 44.1%                       | 0.5%        | 55.4%        | 40.0%                    | 0.0%        | 60.0%        |
| 19 SCANA Corp.            | 57.0%                       | 0.0%        | 43.0%        | 52.5%                    | 0.0%        | 47.5%        |
| 20 Sempra Energy          | 46.5%                       | 0.6%        | 52.9%        | 47.5%                    | 1.0%        | 51.5%        |
| 21 Westar Energy          | 52.3%                       | 0.5%        | 47.2%        | 53.5%                    | 0.5%        | 46.0%        |
| 22 Wisconsin Energy       | 53.7%                       | 0.4%        | 45.9%        | 50.5%                    | 0.0%        | 49.5%        |
| <b>Average</b>            | <b>50.5%</b>                | <b>0.7%</b> | <b>48.8%</b> | <b>48.0%</b>             | <b>0.6%</b> | <b>51.4%</b> |

(a) Company Form 10-K and Annual Reports.

(b) The Value Line Investment Survey (Nov. 26, & Dec. 24, 2010, Feb. 4, 2011).

**CERTIFICATE OF SERVICE**

The undersigned hereby certifies that a true and correct copy of the Pre-Filed Direct Testimony of William E. Avera has been served upon the below-named counsel via First Class mail, postage prepaid, this 14<sup>th</sup> day of March, 2011.



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