

BEFORE  
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of )  
Columbus Southern Power Company For )  
Approval of its Electric Security Plan )  
Including Related Accounting Authority; )  
an Amendment to its Corporate )  
Separation Plan; and the Sale or Transfer )  
Certain Generating Assets )

Case No. 08- 917-EL-UNC

and

In the Matter of the Application of  
Ohio Power Company for Approval of  
its Electric Security Plan Including  
Related Accounting Authority; and an  
Amendment to its Corporate Separation  
Plan

Case No. 08-918-EL-UNC

DIRECT TESTIMONY  
ON REMAND OF  
DR. ANIL MAKHIJA  
ON BEHALF OF  
COLUMBUS SOUTHERN POWER COMPANY AND  
OHIO POWER COMPANY

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DIRECT TESTIMONY  
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DR. ANIL MAKHIJA  
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COLUMBUS SOUTHERN POWER COMPANY AND  
OHIO POWER COMPANY

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

2   A.   My name is Anil Kumar Makhija. My business address is 842 E. Fisher Hall, Fisher  
3       College of Business, The Ohio State University, Columbus, Ohio 43210.

4   **Q.   PLEASE INDICATE BY WHOM YOU ARE EMPLOYED AND IN WHAT**  
5       **CAPACITY**

6   A.   I am a Professor of Finance. I am a tenured full Professor, and I hold the Dean's  
7       Distinguished Professorship at the Fisher College of Business, The Ohio State University.  
8       Previously, I have served as the Chairman of the Finance Department at the Fisher  
9       College of Business, and as an Associate Dean for the Fisher College. I have a Bachelors  
10      Degree (B.Tech.) in Chemical Engineering from the Indian Institute of Technology, New  
11      Delhi, a Masters of Business Administration (MBA) with a Management Science major  
12      from Tulane University in New Orleans, and a Doctorate (PhD) in Finance from the  
13      University of Wisconsin – Madison.

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

16   A.   The purpose of my testimony on remand is to provide support for the propositions that  
17      the obligations of Columbus Southern Power and Ohio Power (collectively, "AEP Ohio"

1 or "the Companies") to be the provider of last resort (POLR) to customers imposes  
2 substantial risks on the Companies, and those risks in turn create real and significant  
3 costs for the Companies. My testimony further supports the proposition that, unless those  
4 costs are compensated, the POLR liability causes a corresponding reduction to the  
5 Companies' equity.

6 **Q. Why does serving as a Provider of Last Resort constitute a cost to a utility?**

7 A. Let us compare two Utilities, A and B, such that A carries a POLR obligation. In  
8 particular, let us define this POLR obligation, as in Ohio, as giving customers the options  
9 (1) to shop and depart from Utility A and its regulated SSO to a CRES provider, and (2)  
10 to subsequently return to Utility A for service. Clearly, these options are valuable to  
11 customers of Utility A. After all, it is reasonable to assume that customers are likely to  
12 depart from Utility A's SSO and gain by it when market prices are less than the regulated  
13 SSO price. It is also reasonable to assume that customers will return to Utility A (and its  
14 regulated SSO) and gain by it when Utility A's SSO price is below the market price. In  
15 other words, Utility A has provided its customers potential benefits that Utility B has not  
16 given to its customers. These very benefits to customers of Utility A constitute a  
17 potential liability to Utility A, a liability that does not exist for Utility B. Simply put,  
18 benefits of the optionality provided to its customers come at a cost to Utility A.

19 **Q. How can we assess the costs to a utility from serving as the Provider of Last Resort?**

20 A. Since the benefits of a POLR obligation to the customers of a utility represent costs that  
21 the utility bears, the value of the options given to the customers equals the POLR costs to  
22 the utility. In other words, the benefits provided to the customers cannot appear out of  
23 thin air. Someone has to provide these benefits, and for that party it constitutes a cost.

1 The cost to the utility that provides the POLR optionality is no more or less than the  
2 value of the options received by the customers. Indeed, this is the approach taken by  
3 Company witness Thomas, who estimates the value of the optionality given to customers  
4 to determine the cost imposed on the Companies from their POLR obligation.

5 **Q. But, what if the utility did not incur any out-of-pocket costs to support its POLR**  
6 **obligation? Does that mean that its POLR obligation has no cost?**

7 A. No. The utility with the POLR obligation still bears the added liability of that obligation.  
8 In our example of Utilities A and B, if cost recovery is not provided for the POLR  
9 obligation, Utility A's shareholders will see a diminution in their equity value. Another  
10 way to see this is to note that Utilities A and B have the same assets but Utility A has a  
11 greater liability and, hence, lower equity value.

12 **Q. You have testified that the cost to the utility providing the POLR options to its**  
13 **customers is equivalent to the benefits (or value) of these options to the customers.**  
14 **But, what if in practice these customers do not exhibit significant rates of switching**  
15 **away from , or returning to, the utility. Then can we automatically assume that the**  
16 **value of the options and corresponding costs to the utility are negligible?**

17 A. No. The value of an option depends on the potential for future outcomes. Standard  
18 option pricing models, such as the Black model, derive values taking this potential into  
19 account. For example, inputs in these models include variability in the market prices and  
20 the time to expiration. If the market price is highly variable, there is a greater likelihood  
21 that market prices will fall below the SSO price and trigger more migration of customers  
22 to CRES providers. The option pricing models automatically address this. In other

1 words, the potential for future shopping is what is important to valuing the cost to the  
2 utility of providing the optionality, and this is not the same as the past shopping behavior.

3 **Q. How do you think the POLR obligation has affected AEP Ohio?**

4 A. AEP Ohio clearly absorbed an added liability as we have explained above. If it could  
5 have made a cash outlay to third parties at an out-of-pocket observable cost and bought  
6 hedges, the provider of the hedge would similarly value the optionality provided to  
7 customers. But that would not have reduced or in any other way altered the liability  
8 itself. It would simply have transferred the liability to the third party. The provider of  
9 the hedge would assume equivalent risk and would require compensation for it. Instead,  
10 AEP Ohio retained the liability for future costs arising out of customers exercising their  
11 options.

12 **Q. You have also explained that there is a diminution of Utility A's equity value unless**  
13 **that utility is provided a recovery for its POLR obligation. How does this happen?**

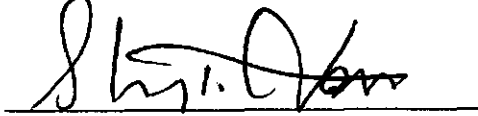
14 A. The earnings of Utility A will have greater variability because its customers are likely to  
15 depart when the market price falls below its SSO price, and to return when the market  
16 price goes above the SSO price. This makes Utility A riskier and its equity requires a  
17 higher required rate of return compared to Utility B. That is, shareholders for Utility A  
18 have a higher risk premium (and, hence, a higher cost of equity capital) as a result of the  
19 optionality it is required to provide to its customers. Cash flows for Utility A should be  
20 discounted at the higher cost of capital, which amounts to a diminution of shareholders  
21 equity for Utility A.

1   **Q.   DOES THAT CONCLUDE YOUR TESTIMONY?**

2   **A.   Yes, it does.**

## CERTIFICATE OF SERVICE

I hereby certify that a copy of Columbus Southern Power Company's and Ohio Power Company's Remand Testimony of Dr. Anil K. Makhija was served by electronic mail upon counsel identified below this 6th day of June, 2011.



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