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**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; an Amendment to its)
Corporate Separation Plan; and the Sale or)
Transfer of Certain Generating Assets.)
)

Case No. 08-917-EL-SSO

In the Matter of the Application of Ohio)
Power Company for Approval of its Electric)
Security Plan; and an Amendment to its)
Corporate Separation Plan.)
)

Case No. 08-918-EL-SSO

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PREPARED TESTIMONY

Of

**Timothy W. Benedict
PLANNING AND MARKET ANALYSIS DIVISION
PUBLIC UTILITIES COMMISSION OF OHIO**

STAFF EXHIBIT _____

July 7, 2011

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1 1. Q. Please state your name and business address.

2 A. My name is Timothy W. Benedict. I am employed by the Public Utilities
3 Commission of Ohio, 180 E. Broad St, Columbus, OH 43215.

4

5 2. Q. What is your current position at the Commission?

6 A. I am a Utility Specialist in the Division of Planning and Market Analysis,
7 Department of Energy and Environment. My responsibilities include economic
8 analysis of wholesale and competitive markets, demand forecasting and resource
9 planning.

10

11 3. Q. Please summarize your educational background and work experience.

12 A. I received a B.A. in Economics from the University of Vermont and a M.A. in
13 Economics from Cleveland State University. I have been employed by TrustCo
14 Bank in Glenville, NY and AmTrust Bank in Cleveland, OH prior to joining the
15 Staff of the Commission in December of 2009.

16

17 4. Q. What is the purpose of your testimony?

18 A. My testimony is limited to the methodology of the Companies' application of the
19 Black model. I suggest certain model improvements that would result in a more
20 accurate option valuation.

21

22

1 5. Q. Does your testimony address whether the Black model is an appropriate tool with
2 which to value the POLR charge?
3 A. No.
4
5 6. Q. Does your testimony address the nature of the responsibility of being the Provider
6 of Last Resort?
7 A. No. My testimony addresses only the appropriateness of the inputs to, and
8 therefore the results of using, the Black model.
9
10 7. Q. What is your understanding of the methodology being used by the Companies to
11 establish the POLR charge?
12 A. The Companies have proposed to value the POLR charge using the Black model,
13 which is a mathematical model used to derive the theoretical value of a financial
14 option. An option is the right, but not the obligation, to buy or sell an asset at a
15 specified price. The Black model is a variant of the more widely recognized
16 Black-Scholes model, and is used when the model is applied to futures contracts.
17
18 8. Q. Should the Commission determine that the Black model is indeed a reasonable
19 methodology for valuing the POLR obligation, do you believe that the model
20 inputs used by the Companies appropriately quantify the POLR charge?
21 A. No. I believe that certain model inputs and parameters are likely to yield an
22 overstated value of the option. Specifically, the assumptions for the interest rate,
23 market price volatility, and term of the option should be modified.

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9. Q. What do you recommend be used as an interest rate input?

A. The interest rate in the model should reflect a “risk-free” rate. I recommend this rate be based on the 5-year Treasury Bill rate, which is often considered a risk free rate due to its being backed by the full faith and credit of the U.S. government.

10. Q. What do you recommend in regards to the volatility assumption?

A. The Companies have applied the volatility observed in forward energy prices to the entire market price, which includes components that are far more stable than the energy component. One example is the capacity component, the market price of which is stable over an entire year and known in advance. Of the ten components identified by the Companies as comprising a competitive benchmark price, only the load following/shaping adjustment, losses, and transaction risk adder are identified as being derived from the energy price, and therefore exhibit the volatility associated with forward energy prices. I estimate that the components related to energy prices comprise approximately 80 percent of the total market price on average. Therefore, the volatility assumed by the Companies in their model should be reduced by 20 percent.

11. Q. What do you recommend in regards to the term of the option?

A. The model may inaccurately value the option if it does not explicitly recognize that customers face a series of options rather than a single option on each

1 megawatt-hour for the entire duration of the ESP. Staff proposes that the model
2 methodology be modified to value a series of load-weighted monthly options,
3 whereby customers have an option on only the load that is yet to be demanded,
4 and only for the duration of the ESP. This more accurately represents the true
5 nature of the series of options available to customers.

6
7 12. Q. Should Staff's proposed modifications be adopted, what would be the effect on
8 the value of the option?

9 A. The modified methodology would result in a lower value for the option, and
10 therefore a lower POLR charge than that which has been proposed by the
11 Companies.

12
13 13. Q. Can anything else be done to make the modeled option value more accurately
14 reflect the true nature of the option it purports to value?

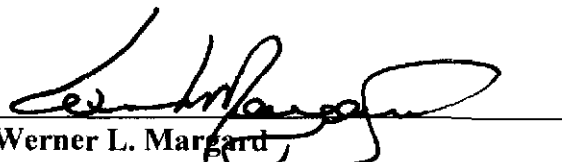
15 A. The Black model, like any other model, must make certain limiting assumptions
16 in order to achieve mathematical precision. The result may be that the model
17 does not fully reflect the specific situation it is intended to address. The
18 Companies are aware that the model is subject to such sources of error and have
19 "continued to refine and improve the option model."¹ This led to the
20 development of the "constrained model", which accounts for tariff-based
21 switching constraints that limit the value of the option. My proposed
22 modifications further refine the model.

¹ Direct Testimony of Laura J. Thomas on Behalf of Columbus Southern Power Company and Ohio Power Company, p. 13.

1 14. Q. Does this conclude your testimony?
2 A. Yes, it does.
3

CERTIFICATE OF SERVICE

I certify that a true copy of the foregoing Prepared Testimony of Timothy W. Benedict, was served electronically upon the persons listed below this 7th day of July, 2011.



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