KYPSC CASE NO. 2017-00321
ATTORNEY GENERAL - REVISED
TABLE OF CONTENTS

DATA REQUEST	WITNESS	TAB NO.
AG-DR-01-011 REVISED	Sarah E. Lawler/David L. Doss, Jr. Scott Burnside	11

VERIFICATION

STATE OF NORTH CAROLINA)
)
COUNTY OF MECKLENBURG)

SS:

The undersigned, Scott Burnside, Manager Post Analyst & Regulatory Support, being duly sworn, deposes and says that he has personal knowledge of the matters set forth in the foregoing data requests are true and correct to the best of his knowledge, information and belief.

Scott Burnside, Affiant

Subscribed and sworn to before me by Scott Burnside on this 20 day of November, 2017.

NOTARY PUBLIC

My Commission Expires:

MARY B VICKNAIR
NOTARY PUBLIC
Davie County
North Carolina
My Commission Expires Sept. 21, 2022

VERIFICATION

STATE OF OHIO)
) **SS:**
COUNTY OF HAMILTON)

The undersigned, Sarah E. Lawler, Utility Strategy Director, being duly sworn, deposes and says that she has personal knowledge of the matters set forth in the foregoing data requests, and that the answers contained therein are true and correct to the best of her knowledge, information and belief.

Sarah E. Lawler Affiant

Subscribed and sworn to before me by Sarah E. Lawler on this 17th day of November, 2017.

NOTARY PUBLIC

My Commission Expires:

NOTARIAL SEAL STATE OF OHIO

ROCCO O. D'ASCENZO
ATTORNEY AT LAW
Notary Public, State of Ohio
My Commission Has No Expiration
Section 147.03 R.C

VERIFICATION

STATE OF NORTH CAROLINA)
)
COUNTY OF MECKLENBURG)

SS:

The undersigned, David L. Doss, Jr., Director, Electric Utilities & Infrastructure, being duly sworn, deposes and says that he has personal knowledge of the matters set forth in the foregoing data requests, and that the answers contained therein are true and correct to the best of his knowledge, information and belief.

David L. Doss, Jr. Affiant

Subscribed and sworn to before me by David L. Doss, Jr. on this 17TH day of NOVEMBER, 2017.

Adam L. Peeples
NOTARY PUBLIC

My Commission Expires: JUNE 30, 2019

REVISED AG-DR-01-011 PUBLIC

REQUEST:

Refer to the Direct Testimony of Mr. Doss at page 5 lines 9-19 regarding the replacement power costs forecasted in the test year.

a. Provide a schedule showing the actual amounts of replacement power cost for each of the years 2013-2016 and for 2017 to date separately for the East Bend and Woodsdale units along with the same for the projected test year. In addition, please describe what considerations would need to be made when reviewing historical replacement power costs associated with the ownership change percentages of the East Bend Station occurring in 2015.

b. Explain how the projected replacement power costs from the GenTrader production cost model were determined and describe any known assumption changes from the levels experienced during the last four actual years.

c. Provide copies of all input and output sources from GenTrader used to source the test year forecasted costs.

RESPONSE:

CONFIDENTIAL PROPRIETARY TRADE SECRET (As to Attachment (c) Only)

a. See attachment AG-DR-01-011(a) Attachment for replacement power costs in 2013-2016 and 2017 to date.

REVISED RESPONSE: See AG-DR-01-011(a) Revised Attachment that shows the forecasted replacement power costs included in the test period. The test period projected replacement power is contained in the total purchased power cost information provided on Schedule C-2.1, page 9, account 555.

It should be noted that the historical data provided through May 2015 includes periods where the Company's Miami Fort unit 6 was operational and provided high capacity factor generation. Also of note, the Company was only responsible for approximately 69% of the costs (including replacement power) related to East Bend prior to December 31, 2014. Beginning January 1, 2015, the Company became fully responsible for all costs associated with East Bend, having acquired a comparable amount of MWs of capacity as those to be retired at Miami Fort 6 before June 2015. The data provided in this response thus includes the historic period replacement power costs that Duke Energy Kentucky incurred as part of its ownership of respective units/stations.

Beginning in June 2015 and going forward, the Company only has a single high capacity factor unit, East Bend. Although the probability of a forced outage is decreased as there is only one unit that can be forced out, the impact of a forced outage is much greater. With two high capacity factor units, one of two units could be forced out and we could still hedge at least some of the load from the remaining unit. Now, if East Bend is

forced off, there is no other high capacity factor unit that can supplement, and we must purchase 100% of our replacement power from PJM.

b. Tbe monthly projected cost of replacement power is calculated starting with the generation output forecast from the GenTrader model. This output is then used to calculate the monthly amount of forced generation (either from a derate or outage) by dividing by one minus the units projected forced outage rate. Next, the projected monthly weighted average cost of fuel inventory (WACI) is subtracted from the monthly forward market power price to calculate the forecasted monthly replacement power cost ($/MWhr). Finally, the replacement power cost ($/MWhr) is multiplied by the amount of forced generation (MWhrs) to calculate tbe forecasted monthly replacement power costs ($). It should be noted that since East Bend has a far larger share of the energy generated to serve the Duke Energy Kentucky customer, for simplicity only the generation forecast, WACI, and forced outage rate of East Bend is used in these calculations. The GenTrader model is regularly updated for various input assumptions, including commodity prices, market power forecasts, outage schedules, and forced outage rates. In addition, the Company's acquisition of the remaining share of East Bend (186 MW) as well as the retirement of Miami Fort 6 (163 MW) are known assumption changes that have occurred within the past four years.

c. Objection. The question is overbroad and unduly burdensome in so far as the question requests all inputs and outputs sources to be provided. It would be nearly impossible to list each and every input and output that is or can be

incorporated into the model. Without waiving said objection and to the extent discoverable, the major inputs and outputs of the GenTrader model are summarized in CONFIDENTIAL AG-DR-01-011(c) Attachment 1 – Inputs and CONFIDENTIAL AG-DR-01-011(c) Attachment 2 – Output provided electronically on CD.

a. Attachment AG-DR-01-011c (1) – Inputs:
    i. Load = Hourly forecast of DEK customer load, MW
    ii. Coal Prices = Coal prices delivered to East Bend Station, $/MMBtu
    iii. Gas Prices = Gas price at Henry Hub and delivered to Woodsdale Station, $/MMBtu
    iv. Power Prices = Power price at AD Hub and DEK Load Zone, $/MWhr
    v. Basis = Difference between LMP at East Bend/Woodsdale Stations and AD Hub, $/MWhr
    vi. Outage Schedule = Planned generator outage schedule
    vii. Hours = Definition of peak and off-peak times
b. Attachment AG-DR-01-011c (2)– Outputs:
    i. GenerationPivot = Monthly generation for each unit, GWHrs
    ii. GenerationRawData = Detailed monthly output, including unit generation, fuel burn, unit emissions, and reagents
    iii. NetC&L = Net congestion and losses for generation and load
    iv. GenerationC&L = Generation congestion and losses

v. LoadC&L = Load congestion and losses

PERSON RESPONSIBLE: David L. Doss, Jr./ Sarah Lawler/Scott Burnside (a)
John D. Swez/ David L. Doss, Jr. (b)
John D. Swez/ David L. Doss, Jr. (c)

Duke Energy Kentucky

Cost removed from FAC recovery due to unplanned derates and outages

Risk period (not accounting period)	East Bend	Miami Fort 6	Woodsdale	Total
Jan-13	$ 310,948	$ 231	$ -	$ 311,179
Feb-13	$ 102,282	$ 192,535	$ -	$ 294,817
Mar-13	$ 332,719	$ 2,770	$ -	$ 335,489
Apr-13	$ 192,949	$ 124,624	$ -	$ 317,573
May-13	$ 46,379	$ 330,839	$ -	$ 377,218
Jun-13	$ 50,836	$ 546,845	$ -	$ 597,681
Jul-13	$ 271,828	$ 244,982	$ -	$ 516,810
Aug-13	$ 24,663	$ 112,882	$ -	$ 137,545
Sep-13	$ 58,813	$ 16,645	$ -	$ 75,458
Oct-13	$ -	$ 136,571	$ -	$ 136,571
Nov-13	$ 169,896	$ 209,959	$ -	$ 379,855
Dec-13	$ 197,665	$ -	$ -	$ 197,665
	$ 1,758,978	$ 1,918,882	$ -	$ 3,677,859
Jan-14	$ 4,621,425	$ 1,553,019	$ -	$ 6,174,444
Feb-14	$ 2,035,099	$ 7	$ -	$ 2,035,106
Mar-14	$ 410,375	$ 1,733,584	$ -	$ 2,143,959
Apr-14	$ -	$ 11	$ -	$ 11
May-14	$ -	$ 1,366,035	$ -	$ 1,366,035
Jun-14	$ 1,108,337	$ 370,167	$ -	$ 1,478,504
Jul-14	$ 97,549	$ 298,844	$ -	$ 396,393
Aug-14	$ 3,471	$ 75,324	$ -	$ 78,795
Sep-14	$ 600,303	$ 130,685	$ -	$ 730,989
Oct-14	$ 10,390	$ 67,406	$ -	$ 77,796
Nov-14	$ -	$ 2	$ -	$ 2
Dec-14	$ 44,926	$ 2,319	$ -	$ 47,244
	$ 8,931,876	$ 5,597,402	$ -	$ 14,529,278
Jan-15	$ 16,397	$ -	$ -	$ 16,397
Feb-15	$ 195,600	$ 280,718	$ -	$ 476,318
Mar-15	$ 15,123	$ 422,558	$ -	$ 437,680
Apr-15	$ 168,672	$ -	$ -	$ 168,672
May-15	$ 77,814	$ -	$ -	$ 77,814
Jun-15	$ 598,486	$ -	$ -	$ 598,486
Jul-15	$ 79,162	$ -	$ -	$ 79,162
Aug-15	$ 72,235	$ -	$ -	$ 72,235
Sep-15	$ 28,493	$ -	$ -	$ 28,493
Oct-15	$ 2,414	$ -	$ -	$ 2,414
Nov-15	$ 36,164	$ -	$ -	$ 36,164
Dec-15	$ 3,881	$ -	$ -	$ 3,881
	$ 1,294,461	$ 703,276	$ -	$ 1,997,737
Jan-16	$ 42,306	$ -	$ -	$ 42,306
Feb-16	$ -	$ -	$ -	$ -
Mar-16	$ -	$ -	$ -	$ -
Apr-16	$ -	$ -	$ -	$ -
May-16	$ -	$ -	$ -	$ -
Jun-16	$ 138,775	$ -	$ -	$ 138,775
Jul-16	$ 58,859	$ -	$ -	$ 58,859
Aug-16	$ 54,143	$ -	$ -	$ 54,143
Sep-16	$ 2,486	$ -	$ -	$ 2,486
Oct-16	$ -	$ -	$ -	$ -
Nov-16	$ -	$ -	$ -	$ -
Dec-16	$1,451,118.28	$ -	$ -	$ 1,451,118
	$ 1,747,687	$ -	$ -	$ 1,747,687

Risk period (not accounting period)	East Bend	Miami Fort 6	Woodsdale	Total	
Jan-17	$ -	$ -	$ -	$ -	
Feb-17	$ 10,956	$ -	$ -	$ 10,956	
Mar-17	$ -	$ -	$ -	$ -	
Apr-17	$ 1,360	$ -	$ -	$ 1,360	
May-17	$ -	$ -	$ -	$ -	
Jun-17	$ 88,718	$ -	$ -	$ 88,718	
Jul-17	$ 784,908	$ -	$ -	$ 784,908	
Aug-17	$ 6,889	$ -	$ -	$ 6,889	
Sep-17	$ 549,670	$ -	$ -	$ 549,670	
Oct-17	$ 47,284	$ -	$ -	$ 47,284	
Nov-17		$ -	$ -	$ -	not available as of 11/20/17
Dec-17		$ -	$ -	$ -	not available as of 11/20/17
	$ 1,489,783	$ -	$ -	$ 1,489,783	
Apr-18	$ 464,561	$ -	$ -	$ 464,561	
May-18	$ 464,561	$ -	$ -	$ 464,561	
Jun-18	$ 464,561	$ -	$ -	$ 464,561	
Jul-18	$ 464,561	$ -	$ -	$ 464,561	
Aug-18	$ 464,561	$ -	$ -	$ 464,561	
Sep-18	$ 464,561	$ -	$ -	$ 464,561	
Oct-18	$ 464,561	$ -	$ -	$ 464,561	
Nov-18	$ 464,561	$ -	$ -	$ 464,561	
Dec-18	$ 464,561	$ -	$ -	$ 464,561	
Jan-19	$ 502,400	$ -	$ -	$ 502,400	
Feb-19	$ 502,400	$ -	$ -	$ 502,400	
Mar-19	$ 502,400	$ -	$ -	$ 502,400	
	$ 5,668,249	$ -	$ -	$ 5,668,249	