KyPSC Case No. 2024-00152
TABLE OF CONTENTS

VERIFICATION

STATE OF NORTH CAROLINA)
)
COUNTY OF MECKLENBURG)

SS:

The undersigned, John Verderame, VP Fuels & Systems Optimization, being duly sworn, deposes and says that he has personal knowledge of the matters set forth in the foregoing supplemental data requests, and that the answers contained therein are true and correct to the best of his knowledge, information and belief.

John Verderame, Affiant

Subscribed and sworn to before me by John Verderame on this 25th day of October, 2024.

NOTARY PUBLIC

My Commission Expires:

SHAMELL M WILSON
My Comm. Expires
NOTARY PUBLIC
July 06, 2026
MECKLENBURG COUNTY, NC

STATE OF NORTH CAROLINA)
)
COUNTY OF MECKLENBURG)

SS:

The undersigned, Ryan Trogstad, Senior Data Science Consultant, being duly sworn, deposes and says that he has personal knowledge of the matters set forth in the foregoing supplemental data requests, and that the answers contained therein are true and correct to the best of his knowledge, information and belief.

Ryan Trogstad, Affiant

Subscribed and sworn to before me by Ryan Trogstad on this 24th day of October, 2024.

LUCAS K SMITH NOTARY PUBLIC MECKLENBURG COUNTY, NC

NOTARY PUBLIC

My Commission Expires: June 5, 2029

Duke Energy Kentucky
Case No. 2024-00152
AG First Set of Data Requests
Date Received: August 23, 2024

PUBLIC SUPPLEMENTAL AG-DR-01-004

REQUEST:

Confirm that the costs of using the MEL technology has been increasing for several reasons, including: (i) the production of calcium sulfite solids that are difficult to dewater, which requires the use of additional materials and processing; and (ii) it requires the use of an expensive reagent, quicklime, and stabilization additives.

a. Confirm that these rising costs are affecting the competitiveness of the East Bend plant in power generation markets. If so confirmed, provide any data to support this conclusion.

b. Confirm that from the 1980s when quicklime cost approximately $40 / ton, the cost had risen to $133 / ton, an increase of approximately 232%.

ORIGINAL RESPONSE:

a. Confirmed – The magnesium enhanced lime WFGD process relies on a costly MEL commodity that is an order of magnitude more than the comparable limestone reagent for SO2 control. In addition, the WFGD byproduct characteristics produced from MEL has a particle shape that makes it difficult to dewater and therefore requires more quicklime and fly ash for fixation so the product can be placed in the landfill. These factors raise the dispatch cost of East Bend substantially impacting its competitiveness in the generation market.

b. The cost has risen beyond $133/TN, this was the previous contract to the current supply contract of $280/TN for 2023 and $300/TN for 2024. These are commodity only prices and do not include transportation.

SUPPLEMENTAL RESPONSE:

CONFIDENTIAL PROPRIETARY TRADE SECRET

After Duke Energy Kentucky filed its Limestone Conversion CPCN Application in late July 2024, its current MEL supplier approached the Company to discuss the potential for [redacted]

The Company has updated its response to this data request as a result.

a. Confirmed – Despite the reduction in the MEL commodity supply cost proposed by the current supplier, the magnesium enhanced lime WFGD process continues to rely on a costly MEL commodity that is an order of magnitude more than the comparable limestone reagent for SO2 control. Please see STAFF-DR-01-021 Confidential Supplemental Attachment and STAFF-DR-01-021 Confidential Attachment Dispatch Cost Impact Tabs for the projected impacts on dispatch costs between the MEL product and limestone.

b. [redacted] These are commodity only prices and do not include transportation.

PERSON RESPONSIBLE: Chad Donner (Original response)
John A. Verderame (Supplemental response)

Duke Energy Kentucky
Case No. 2024-00152
AG First Set of Data Requests
Date Received: August 23, 2024

PUBLIC SUPPLEMENTAL AG-DR-01-005

REQUEST:

Reference the Application in this matter, paragraph 11. Provide a more detailed explanation to support the Company's assertion that it expects the cost of the MEL reagent to continue rising at a rate double that of limestone.

ORIGINAL RESPONSE:

As shown on the table on page 9, line 2 of Chad Donner's Direct Testimony, when comparing past contract costs of MEL to that of limestone contract costs in the region for other sites, historically the MEL has escalated double that of limestone. Based on history, it is reasonable to expect the escalation rate of the MEL reagent will remain double to that of limestone."

SUPPLEMENTAL RESPONSE:

CONFIDENTIAL PROPRIETARY TRADE SECRET

Please see Supplemental Testimony of John A. Verderame. The Company has been offered a new MEL supply contract from its existing supplier consisting of a [redacted] Based on history, it is reasonable to expect that the

escalation rate of the MEL reagent will again exceed [redacted] once the proposed contract term is completed.

PERSON RESPONSIBLE: Chad Donner (Original response)
John A. Verderame (Supplemental response)

Duke Energy Kentucky
Case No. 2024-00152
AG First Set of Data Requests
Date Received: August 23, 2024

SUPPLEMENTAL AG-DR-01-006

REQUEST:

Reference the Application, paragraph 12. Explain the additional limitations on MEL supply that DEK has learned about.

ORIGINAL RESPONSE:

Please see the Company's confidential response to STAFF-DR-01-005(a) and (b).

SUPPLEMENTAL RESPONSE:

Please see the Company's confidential supplemental response to STAFF-DR-01-005(a).

PERSON RESPONSIBLE: John A. Verderame

Duke Energy Kentucky
Case No. 2024-00152
AG First Set of Data Requests
Date Received: August 23, 2024

SUPPLEMENTAL AG-DR-01-008

REQUEST:

Confirm that DEK projects that with the proposed Limestone Conversion Project, East Bend's dispatch costs should decrease.

ORIGINAL RESPONSE:

Confirmed**.** Please see STAFF-01-021 Confidential Attachment and the response to STAFF-DR-01-002 for additional details.

SUPPLEMENTAL RESPONSE:

Confirmed. Please see STAFF-DR-01-021 Confidential Supplemental Attachment and the supplemental response to STAFF-DR-01-002 for additional details.

PERSON RESPONSIBLE: Ryan Trogstad

Duke Energy Kentucky
Case No. 2024-00152
AG First Set of Data Requests
Date Received: August 23, 2024

PUBLIC SUPPLEMENTAL AG-DR-01-011

REQUEST:

Referring to Application paragraph no. 15, confirm that DEK identified the following potential solutions: 1) a Lime Stone Conversion project; 2) conducting a request for proposals (RFP) to explore alternative sources for the existing MEL product with the correct chemical composition to operate the WFGD system; and 3) system renovations for onsite mixing of magnesium hydroxide with hi-calcium quicklime to create a replacement mag-lime product that possesses similar chemical composition to operate the existing WFGD system. If so confirmed, confirm also that:

a. DEK did not receive any cost-competitive bids in response to the RFP, thus eliminating that potential alternative;
b. Onsite chemical mixing was a more expensive alternative, and thus would further erode the East Bend plant's cost competitiveness; and
c. The conversion of the WFGD to a limestone inhibited oxidation process is the most economic and most reasonable solution.

ORIGINAL RESPONSE:

Confirmed.

a. Confirmed.
b. Confirmed.
c. Confirmed.

See also, the Company's response to Confidential STAFF-DR-01-022 for a discussion of the details relating to the cost/benefits analysis of the three considered alternatives.

SUPPLEMENTAL RESPONSE:

CONFIDENTIAL PROPRIETARY TRADE SECRET

After Duke Energy Kentucky filed its Limestone Conversion CPCN Application in late July 2024, its current MEL supplier approached the Company to discuss the potential for [redacted]

The Company has updated its response to this data request as a result.

a. See Company's confidential supplemental response to STAFF-DR-01-005 regarding the updated supply offer from its current MEL supplier.

c. The conversion of the WFGD to a limestone inhibited oxidation process remains the most economic and most reasonable solution to mitigate the continued fuel security risk stemming from the scarcity of the MEL product that has the correct chemical content required to operate the WFGD.

See also, the Company's confidential supplemental response to STAFF-DR-01-022 for a discussion of the details relating to the updated cost/benefits analysis of the limestone conversation project and the RFP/Alternative Sources alternatives.

PERSON RESPONSIBLE: John A. Verderame

Duke Energy Kentucky
Case No. 2024-00152
AG First Set of Data Requests
Date Received: August 23, 2024

PUBLIC SUPPLEMENTAL AG-DR-01-012

REQUEST:

Provide copies of any cost-benefit analyses / studies the Company conducted in regard to the study of the alternatives outlined in the Application, and as discussed in the question immediately above.

ORIGINAL RESPONSE:

Please see STAFF-DR-01-021 Confidential Attachment as well as the Company's confidential response in STAFF-DR-01-022 for a discussion of the details relating to the cost/benefits analysis of the three considered alternatives.

SUPPLEMENTAL RESPONSE:

CONFIDENTIAL PROPRIETARY TRADE SECRET

After Duke Energy Kentucky filed its Limestone Conversion CPCN Application in late July 2024, its current MEL supplier approached the Company to discuss the potential for [redacted]

The Company has updated its response to this data request as a result.

Please see STAFF-DR-01-021 Confidential Supplemental Attachment as well as the Company's confidential supplemental response to STAFF-DR-01-022 for a discussion of the details relating to the updated cost/benefits analysis of the limestone conversation project and the RFP/Alternative Sources alternatives.

PERSON RESPONSIBLE: John A. Verderame