VERIFICATION

STATE OF INDIANA)
) **SS:**
COUNTY OF HENDRICKS)

The undersigned, Andrew Taylor, Manager Products & Services, 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.

Andrew Taylor, Affiant

Subscribed and sworn to before me by Andrew Taylor on this 3 day of December, 2021.

NOTARY PUBLIC

My Commission Expires: 3/13/24

SEAL
NOTARY PUBLIC, STATE OF INDIANA
HENDRICKS COUNTY
JOHN DELOUGHERY
COMMISSION NUMBER 678735
MY COMMISSION EXPIRES MARCH 13, 2024

VERIFICATION

STATE OF NORTH CAROLINA)

) **SS:**

COUNTY OF ~~MECKLENBURG~~ Lincoln)

The undersigned, Benjamin Passty, Lead Load Forecasting Analyst, 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.

Benjamin WB Passty

Benjamin Passty Affiant

Subscribed and sworn to before me by Benjamin Passty on this 6 day of December, 2021.

Sheila Lemoine

NOTARY PUBLIC

Sheila Lemoine
Notary Public
Lincoln County
North Carolina
My Commission Expires 7/21/2024

My Commission Expires: July 21, 2024

G.S. § 10B-41 NOTARIAL CERTIFICATE FOR ACKNOWLEDGMENT

Lincoln County, North Carolina

I certify that the following person(s) personally appeared before me this day, each acknowledging to me that he or she signed the foregoing document: Benjamin Passty

Date: December 6, 2021

Sheila Lemoine
Official Signature of Notary

Sheila Lemoine
Notary Public
Lincoln County
North Carolina
My Commission Expires 7/21/2024

Sheila Lemoine, Notary Public

My commission expires: July 21, 2024

I signed this notarial certificate on December 6, 2021 according to the emergency video notarization requirements contained in G.S. 10B-25.

Notary Public location during video notarization: Lincoln County
Stated physical location of principal during video notarization: Mecklenburg County

This certificate is attached to a Verification signed by Benjamin Passty on December 6, 2021.

VERIFICATION

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

The undersigned, Brian Bak, Manager DSM Analytics, 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.

Brian Bak, Affiant

Subscribed and sworn to before me by Brian Bak, on this 14th day of December, 2021.

NOTARY PUBLIC

My Commission Expires:

ANDREW J. DUMOND
NOTARY PUBLIC, STATE OF OHIO
HAMILTON COUNTY
My Commission Expires 7/16/2022

VERIFICATION

STATE OF KENTUCKY)
)
COUNTY OF JEFFERSON)

SS:

The undersigned, Daniel D. Sympson, Generation & Transmisson Strategy Director, 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.

Daniel D. Sympson, Affiant

Subscribed and sworn to before me by Daniel D. Sympson, on this 11th day of December, 2021.

NOTARY PUBLIC

My Commission Expires: 06-09-2023

GEOFFREY LEASE
Notary Public - State at Large
Kentucky
My Commission Expires June 09, 2023
Notary ID 623546

VERIFICATION

STATE OF NORTH CAROLINA)

) SS:

COUNTY OF MECKLENBURG)

The undersigned, Matthew Kalemba, Director DET Planning & Forecasting, 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.

Matthew Kalemba, Affiant

Sworn to and subscribed before me this 2nd day of December, ~~2020~~ 2021.

Peggy Holton
Notary Public

My Commission expires: 12/22/2021

PEGGY HOLTON NOTARY PUBLIC WAKE COUNTY, NC

[SEAL]

I signed this notarial certificate on 12/2/2021 according to the emergency video notarization requirements contained in G.S. 10B-25.

Notary Public location during video notarization: Wake County

Stated physical location of principal during video notarization: Mecklenburg County

VERIFICATION

STATE OF OHIO)
)
COUNTY OF HAMILTON)

SS:

The undersigned, Michael J. Pahutski, Regional Director, Ohio-Kentucky Large Account Management, 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.

Michael J. Pahutski, Affiant

Subscribed and sworn to before me by Michael J. Pahutski, on this 9th day of December, 2021.

MAHA JALIL KHOURY
Notary Public, State of Ohio
My Comm. Expires 03/10/2024

NOTARY PUBLIC

My Commission Expires: 3/10/2024

VERIFICATION

STATE OF NORTH CAROLINA)
) **SS:**
COUNTY OF ~~MECKLENBURG~~ & Lincoln)

The undersigned, Scott Park, Director IRP & Analytics-Midwest, 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.

Scott Park, Affiant

Subscribed and sworn to before me by Scott Park on this 15 day of December 2021.

Sheila Lemoine
NOTARY PUBLIC

Sheila Lemoine
Notary Public
Lincoln County
North Carolina
My Commission Expires 7/6/2025

My Commission Expires

G.S. § 10B-41 NOTARIAL CERTIFICATE FOR ACKNOWLEDGMENT

Lincoln County, North Carolina

I certify that the following person(s) personally appeared before me this day, each acknowledging to me that he or she signed the foregoing document: Scott Park

Date: December 15, 2021

Sheila Lemoine
Official Signature of Notary

Sheila Lemoine
Notary Public
Lincoln County
North Carolina
My Commission Expires 7/21/2024

Sheila Lemoine, Notary Public

My commission expires: July 21, 2024

I signed this notarial certificate on December 15, 2021 according to the emergency video notarization requirements contained in G.S. 10B-25.

Notary Public location during video notarization: Lincoln County
Stated physical location of principal during video notarization: Mecklenburg County

This certificate is attached to a Verification signed by Scott Park on December 15, 2021.

KyPSC Case No. 2021-00245
TABLE OF CONTENTS

Duke Energy Kentucky
Case No. 2021-00245
STAFF Second Set Data Requests
Date Received: November 18, 2021

STAFF-DR-02-001

REQUEST:

Refer to Duke Kentucky's response to Commission Staff's First Request for Information (Staff's First Request), Item 3, and to the IRP, Section 1, pages 7-8. Explain whether the declines in load have continued to reverse itself and whether, and if so how, Duke Kentucky is pursuing least-cost options for any additional capacity needs.

RESPONSE:

Internal monitoring of sales and adjustment for weather conditions suggest that—for the months since the issuing of the IRP—sales are slightly ahead of the 2020 pace and roughly in line with expectations at the start of the year. At least annually, we update planning assumptions and assess the capacity position on a long term basis as well as in conjunction with the PJM auction.

PERSON RESPONSIBLE: Benjamin W. Passty
Scott Park

Duke Energy Kentucky
Case No. 2021-00245
STAFF Second Set Data Requests
Date Received: November 18, 2021

STAFF-DR-02-002

REQUEST:

Refer to Duke Kentucky's response to Staff's First Request, Item 5.b. In regards to future reserve margin requirements as renewable penetration increases, wind is considered to be a complementary resource to solar and batteries are also thought as being complementary to all renewable resources. Explain whether Duke Kentucky has considered modeling resources as a combination, not individually.

RESPONSE:

When Duke Energy Kentucky fleet is modelled, the interaction and complimentary nature of all resources are included. For example, in the summer, the high output of solar is evaluated in conjunction with the relatively lower wind output. Conversely, in the winter, reduced solar output is evaluated alongside the relatively higher wind output.

PERSON RESPONSIBLE: Scott Park

Duke Energy Kentucky
Case No. 2021-00245
STAFF Second Set Data Requests
Date Received: November 18, 2021

STAFF-DR-02-003

REQUEST:

Refer to Duke Kentucky's response to Staff's First Request, Item 11.g., and to the IRP, Section 4A, Figure 4.1, page 35.

a. Explain the rationale for modeling a 1,157 MW natural gas combined cycle (CC) unit when the model is allowed to only select a fractional amount of the total capacity.

b. If the low cost renewable scenario with carbon regulation as depicted in the IRP Figure 6.5, page 53, were to be selected and go through the CPCN process, explain how Duke Kentucky would handle the CC unit's excess capacity.

RESPONSE:

a. Larger units are modeled due to the economies of scale associated, in this case, with a larger and more efficient CC. Modeling fractional ownership accomplishes two objectives- better identifies the resource of a need by the utility, and 2) leaves open the opportunity to partner with another entity with whom Duke Energy Kentucky can share the synergies of a new resource.

b. Speaking to how partial ownership of a CC, in this example, would be effectuated, Duke Energy Kentucky would solicit interest with logical partners such as other LSE, merchant companies or affiliates. If there is mutual interest and the business case makes sense, the arrangement by the parties would be addressed in detail as

part of the CPCN process for Duke Energy Kentucky's ownership portion of the resource.

PERSON RESPONSIBLE: Scott Park

Duke Energy Kentucky
Case No. 2021-00245
STAFF Second Set Data Requests
Date Received: November 18, 2021

STAFF-DR-02-004

REQUEST:

Refer to Duke Kentucky's response to Staff's First Request, Item 12.d. Duke Kentucky models wind resources as actual ownership. Explain whether this ownership is exclusive to Duke Kentucky's footprint.

RESPONSE:

The Duke Energy Kentucky IRP is agnostic to ownership and only looks to identify resource needs over time. Ownership structure would be addressed as part of the CPCN process.

PERSON RESPONSIBLE: Scott Park

Duke Energy Kentucky
Case No. 2021-00245
STAFF Second Set Data Requests
Date Received: November 18, 2021

STAFF-DR-02-005

REQUEST:

Refer to Duke Kentucky's response to Staff's First Request, Item 15, and to the IRP, Section 4B, page 36, Appendix B, Figure B-3a. Since Duke Kentucky appears to be a summer, not winter, peaking utility and PJM utilizes a utility's unforced capacity (UCAP) to satisfy capacity requirements, providing optimized portfolio runs with UCAP as opposed to installed capacity (ICAP) would seem to present a different reserve margin picture I terms of Duke Kentucky's PJM obligations/requirements.

a. Explain why fossil units are modeled using winter as opposed to summer capacity amounts.

b. Explain why renewables are modeled using nameplate capacity when PJM does not give full credit to renewable nameplate capacity toward capacity obligations.

c. Provide updates to the tables provided in Item 15, including reserve margins using the summer UCAP capacity values, i.e., the capacity values that are pertinent to satisfying PJM capacity requirements, including transmission losses and any other factor that is pertinent to the satisfaction of PJM capacity and reserve margin requirements. For the transmission losses and any other pertinent factors, include these separately as appropriate for identification purposes.

d. Based on the tables as presented, explain why Duke Kentucky models portfolios that produce reserve margins that go as high as 182 percent and the rationale as to why that is reasonable and who would be expected to cover such excessive costs.

RESPONSE:

a. Fossil units were modeled using their firm capacity ratings which can vary by season. For presentation purposes, max capacity values were used to inform the reader on the actual size of the resource.

b. Similar to how fossil generation was modeled and presented- firm capacity was used for modeling (UCAP) while for presentation purposes, max capacity values were used to inform the reader on the actual size of the resource.

c. Please see STAFF-DR-02-005(c) Attachment for UCAP reserve margins for each portfolio. Transmission and distribution losses are factored into the load forecast.

d. Reserve margins need to be taken in context with the prevailing resource adequacy construct. While a future reserve margin based on today's construct (including today's contribution to peak for solar and wind) may appear high, if the PJM system transitions strongly toward intermittent resources, it is likely that the contribution to peak of solar and wind will decrease and the reserve margin requirement will increase. It is also worth noting that once a reserve margin requirement is met, meaning resource adequacy has been satisfied, higher reserve margins take a back seat to PVRR. For example, in comparing two portfolios where portfolio A has a PVRR of $100 and a reserve margin of 15% and portfolio B has a PVRR of $99 and a reserve margin of 16%, portfolio B is preferred due to its lower cost; the fact that it has a higher reserve margin is less relevant. As to the 182% reserve margin

question, this does appear high but is due to the addition of renewables that define this more aggressive approach at transitioning and diversifying the fleet, but again, once the reserve margin requirement is met, the actual reserve margin becomes secondary to other factors.

PERSON RESPONSIBLE: Scott Park

SUMMER UCAP RESERVE MARGINS BY YEAR

PORTFOLIOS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Ref w/CO2 (High Gas)	27.8%	26.7%	23.7%	23.1%	21.5%	20.5%	20.2%	19.8%	19.7%	21.2%	23.5%	25.0%	25.5%	38.4%	9.9%
Ref w/CO2 (Base Gas)	27.8%	26.7%	23.7%	23.1%	21.8%	20.8%	9.0%	8.9%	8.8%	8.8%	8.8%	8.9%	9.6%	9.2%	20.9%
Ref w/CO2 (Low Gas)	27.8%	26.7%	23.7%	23.1%	14.5%	13.5%	13.3%	12.9%	12.5%	11.2%	10.8%	10.0%	9.4%	9.8%	11.7%
Ref w/o CO2 (High Gas)	27.8%	26.7%	23.7%	23.1%	21.5%	20.5%	20.2%	19.8%	19.5%	18.0%	18.7%	20.8%	22.0%	22.4%	21.5%
Ref w/o CO2 (Base Gas)	27.8%	26.7%	23.7%	23.1%	21.5%	20.5%	20.2%	19.8%	19.5%	18.0%	17.6%	16.8%	16.1%	15.4%	14.4%
Ref w/o CO2 (Low Gas)	27.8%	26.7%	23.7%	23.1%	14.5%	13.5%	13.3%	12.9%	12.5%	11.2%	10.8%	10.0%	9.4%	8.7%	8.9%
Transition A	28.6%	28.3%	26.1%	27.1%	26.9%	27.2%	28.1%	28.4%	28.5%	27.4%	27.4%	27.1%	26.7%	26.5%	25.1%
Transition B	29.6%	30.4%	29.1%	31.3%	31.3%	31.6%	32.4%	33.0%	33.6%	33.1%	33.5%	33.6%	34.0%	34.4%	8.8%
EB2 Gas Conversion	27.8%	26.7%	23.7%	23.1%	21.5%	20.5%	20.2%	19.8%	19.5%	18.0%	17.6%	19.6%	21.2%	22.2%	21.5%
EB2 CC Replacement	27.8%	26.7%	23.7%	23.1%	21.5%	20.5%	20.2%	19.8%	19.5%	17.3%	16.9%	18.9%	20.5%	21.5%	20.9%
EB2 CT Replacement	27.8%	26.7%	23.7%	23.1%	21.5%	20.5%	20.2%	19.8%	19.5%	11.2%	10.8%	12.9%	14.5%	15.5%	14.9%
EB2 Renewable Replacement	27.8%	26.7%	26.1%	30.9%	31.1%	32.0%	33.7%	35.2%	36.6%	8.7%	9.5%	9.9%	10.3%	10.8%	11.0%

Duke Energy Kentucky
Case No. 2021-00245
STAFF Second Set Data Requests
Date Received: November 18, 2021

STAFF-DR-02-006

REQUEST:

Refer to Duke Kentucky's response to Staff's First Request, Item 16, to the IRP, Section 4A, Figure 4.1, page 35, and to the IRP, Section 6, Figures 6.1-6.5. Explain whether the list of available resources in Figure 4.1 is the portfolio of resources made available to the model, optimized under different assumptions, and the results of which are presented in Figures 6.1-6.5.

RESPONSE:

Yes, this is correct.

PERSON RESPONSIBLE: Scott Park

Duke Energy Kentucky
Case No. 2021-00245
STAFF Second Set Data Requests
Date Received: November 18, 2021

STAFF-DR-02-007

REQUEST:

Refer to Duke Kentucky's response to Staff's First Request, Item 19.a. For the first set and second of optimizations titled Ref.w/o CO2, explain how the model is treating the first three scenarios that say CO2 is included when the premise is that CO2 is not included.

RESPONSE:

The top portion of the table shown in 19(a) provides data for how all of the portfolios perform in the Reference without CO2 Regulation scenario; the lower portion provides data for how all of the portfolios perform in the Reference with CO2 Regulation scenario.

PERSON RESPONSIBLE: Scott Park

Duke Energy Kentucky
Case No. 2021-00245
STAFF Second Set Data Requests
Date Received: November 18, 2021

STAFF-DR-02-008

REQUEST:

Refer to Duke Kentucky's response to Staff's First Request, Item 34, and to the IRP, Figure 5.2, page 41. The EE and DR forecasts do not match between the two figures. Reconcile the apparent differences between the updated Figure B-4a and Figure 5.2.

RESPONSE:

Regarding the DR forecast, there is a difference between our total capability in this category (displayed on page 41), and the amount of DSM that we register with PJM via the PowerShare and PowerManager programs (displayed in Figure B-4a). This difference is driven by the uncertainty regarding customer load and weather conditions, as well as PJM-specific registration requirements.

Regarding the UEE part of the request, the table in appendix B presents UEE values that differ from table 5.2 for several reasons: first, our load forecasting process computed them through a class-specific shaping process for the time of peak, including an adjustment of line losses; second, a set of programs that are "behavioral" were not included, as they didn't correspond clearly to any major class of customers. This tracking of customer classes is part of the load forecasting process but not relevant to the IRP processes. Table 5.2 is based on a calculation from program data that is date-specific, and was not affected by these adjustments.

PERSON RESPONSIBLE: Benjamin W. Passty

Duke Energy Kentucky
Case No. 2021-00245
STAFF Second Set Data Requests
Date Received: November 18, 2021

STAFF-DR-02-009

REQUEST:

Refer to Duke Kentucky's response to Staff's First Request, Item 36 Attachment, and to the IRP, Appendix B, Figure B-5. The updated attachment amounts in the "Volume" column do not match the amounts in Figure B-5. Reconcile the differences.

RESPONSE:

The response to item 36 was intended to update Figure B-5 by adding back deductions for UEE programs that were made to make the "Volume" column match the "Peak" Column regarding the treatment of this load reduction.

Adding Company use, anticipated to be 680 MWH annually, to the "Volume" column in that response will bring this column exactly into alignment with the amounts in Figure B-2b. This amount of energy is sufficiently small—relative to the annual Volume—such that the load factor calculations are not affected at the level of precision that is displayed in the table.

PERSON RESPONSIBLE: Benjamin W. Passty

Duke Energy Kentucky
Case No. 2021-00245
STAFF Second Set Data Requests
Date Received: November 18, 2021

STAFF-DR-02-010

REQUEST:

Refer to Duke Kentucky's response to Staff's First Request, Item 41. Explain why Duke Kentucky used 2018 scalars brought forward to 2021 rather than using the more recent updated Moody's forecasts and why it is reasonable to assume that assumptions made in 2018 regarding more or less optimistic outlooks are applicable in 2021.

RESPONSE:

Speaking in a statistical context, assumptions about the range of possible outcomes rest on consideration of the *variance* of possible outcomes rather than the *mean*. While the economic trauma of recent times is undeniable, the impact to factors that represent the potentials and capacity of the economy—the underlying capital stock and technology that represent a potential economic output level given full employment—have been less severe. The rapid growth in the current Moody's baseline forecast represents a rapid return to a path defined from output levels, rather than a transition into a substantially different economic path. For these reasons, a deep reconsideration of the variance of outcomes is not deemed necessary for this forecast refresh.

PERSON RESPONSIBLE: Benjamin W. Passty

Duke Energy Kentucky
Case No. 2021-00245
STAFF Second Set Data Requests
Date Received: November 18, 2021

STAFF-DR-02-011

REQUEST:

Refer to the IRP, Section 2C2, page 12, and Section 2C5, pages 16-17.

a. Explain the presumptions of Duke Kentucky that onshore wind energy is a viable resource within Kentucky and the Duke Kentucky service territory. Further explain whether Duke Kentucky referred to any wind-speed studies or maps that show the resource to be economically viable.

b. Explain the presumptions of Duke Kentucky that solar energy is a viable resource within Kentucky and the Duke Kentucky service territory. Further explain whether Duke Kentucky referred to any solar irradiance studies or maps that show the resource to be economically viable.

RESPONSE:

a. Onshore wind was considered a viable resource by initially referencing the NREL 80m annual wind speed map to determine if the annual wind speeds in Kentucky are similar to other locations outside of Kentucky where utility scale wind generation currently exists. In the case of Kentucky, as noted by the Energy and Environment Cabinet website eec.ky.gov (https://eec.ky.gov/Energy/Documents/Wind%20Energy.pdf), the annual wind speed are relatively low but certain specific sites may lead to sufficient generation. The Company then developed a representative 30-year hourly forecasted wind profile that was used in production cost modeling and capacity expansion modeling.

b. Solar irradiance is not as variable or reliant on topography as wind, and Duke Energy has known and seen solar adoption across all areas of the US, including Kentucky and its surrounding states. As of 2020, Duke Energy Kentucky has 6.8 MWs of solar capacity in Kentucky. Given the existing solar and the fairly consistent Global Horizontal Irradiance (GHI) in the central US (https://www.nrel.gov/gis/assets/images/solar-annual-ghi-2018-usa-scale-01.jpg), Duke Energy developed 30-year forecasted solar profiles for use in the production cost models and capacity expansion models.

PERSON RESPONSIBLE: Matthew Kalemba

Duke Energy Kentucky
Case No. 2021-00245
STAFF Second Set Data Requests
Date Received: November 18, 2021

STAFF-DR-02-012

REQUEST:

Refer to the IRP, Section 7, pages 64-67, and the IRP generally. Under updated assumptions and taking into account the most recent data available on natural gas prices, PJM market prices, capital costs, etc., state whether Duke Kentucky contends that its 2021 IRP portfolio remains optimally relevant, and explain each basis for Duke Kentucky's response.

RESPONSE:

Yes, the Company believes its IRP remains relevant. The IRP analysis is complex and takes many months to conduct. The IRP takes into account all relevant information available, or can be reasonably predicted, at the time the analysis is made. The Commission's regulations provide the guidelines for what the analysis should entail. It is acknowledged that the numerous inputs (e.g. market prices for commodities, capital costs, labor assumptions, interest rates, etc) change over time and indeed, during the period of time the Commission reviews the Company's plan before it issues any opinions. Such has always been the case. It is not feasible or reasonable to continually refresh the IRP analysis anytime there is a change to the underlying assumptions as the IRP would never be competed and no decisions could be made. Such a process would not be an efficient use of Company resources and would likely increase costs to the customers.

The IRP is but one tool the Commission has to ensure that utilities it regulates are providing reasonable service, and represents a snapshot in time that looks forward to the

future based upon what is known or can be reasonably predicted to occur and impact supply. Indeed, Duke Energy Kentucky will have to seek Commission authorization through a subsequent filing, before it constructs any supply-side resource that does not qualify as an ordinary extension of the existing system. The Company will have to support its filing at that time. Accordingly reliance upon information that, while timely when the analysis was performed, but may have subsequently become outdated after the plan was filed, remains reasonable.

PERSON RESPONSIBLE: Scott Park

Duke Energy Kentucky
Case No. 2021-00245
STAFF Second Set Data Requests
Date Received: November 18, 2021

STAFF-DR-02-013

REQUEST:

Refer to the IRP, Appendix D, pages 141-142.

a. Provide more details of and explain how Duke Kentucky anticipated the project cost of the SCR performance upgrade for East Bend 2 in the early-2020s timeframe for the purposes of the modeling.

b. Provide more details of and explain how Duke Kentucky anticipated the ELG placeholder project cost for East Bend in the early-2030s timeframe for the purposes of the modeling.

c. Explain whether these projects might be expected to incur any additional, post-completion O&M costs, and whether they were included in the modeling.

d. Explain how the placeholder project costs factored into the simulation of the portfolios.

e. Confirm that entities within the PJM region would incur similar project costs to those assumed in this IRP, and explain whether, and if so how, those costs are captured within the simulation of PJM market power prices.

RESPONSE:

a. Please see Duke Energy Kentucky's response to STAFF-DR-01-049, part (a). No detailed project budget or defined scope has been developed for the placeholder SCR upgrade project. The cost utilized was merely a rough estimate. There is no further detail to provide.

b. No detailed project budget or defined scope has been developed for the placeholder ELG compliance project. The cost utilized was merely a rough estimate. This project is conceptually envisioned to represent process improvements to the existing waste fixation system for increased operational efficiency.

c. There were no incremental O&M costs included is the analysis associated with the SCR upgrade or ELG placeholder projects. Additional variable cost for ammonia reagent may be expected if the SCR were to perform better and have increased NOx removal; however, such cost would be offset by reduced NOx emission allowance costs from the reduced NOx emissions. Also, since East Bend already incurs O&M costs for the existing waste fixation system, the system process improvements conceptualized for the future ELG rule may not be expected to result in additional O&M costs; if anything, such process efficiencies may be expected to reduce O&M costs. Such potential change in cost has not been evaluated or quantified.

d. The placeholder project costs were included as avoidable fixed costs with unit retirement by or before the applicable installation date of the project.

e. Objection. Duke Energy Kentucky objects to part (e) of this request to the extent it seeks information not possessed or easily obtained by Duke Energy Kentucky. Without waiving said objection, this question is not possible to answer because Duke Energy Kentucky does not know the existing environmental state of every other unit in PJM and to what extent similar (or other) environmental cost risk exposure could apply.

PERSON RESPONSIBLE: Daniel Sympson
Legal, as to objection.

Duke Energy Kentucky
Case No. 2021-00245
STAFF Second Set Data Requests
Date Received: November 18, 2021

STAFF-DR-02-014

REQUEST:

State whether increased investment in cost effective energy efficiency and demand response is a way to offset some of the increased costs of producing a MW, and explain each basis for Duke Kentucky's response.

RESPONSE:

For EE or DR measures which are determined to be cost effective under the Utility Cost Test (UCT), investing in those EE/DR measures is a lower cost alternative than providing the same MW of energy using traditional utility investments, i.e. building a new plant or T&D resource. By definition, the Avoided Costs used in the UCT score are the cost to provide an incremental unit of Energy, Capacity and T&D investment required to serve customer load. Provided the NPV of Avoided Costs exceed the NPV of the EE/DR program costs, i.e. a UCT score of greater than 1.0, then the EE/DR programs are cost effectively offsetting the cost of producing additional MW though new supply side resources. Since the EE/DR cost effectiveness tests compare the sum of avoided energy, capacity and T&D cost, the EE/DR may not be less expensive than producing an incremental MW with an existing unit (avoided energy), but is a more cost effective option as compared to constructing new supply side resources.

PERSON RESPONSIBLE: Brian Bak

Duke Energy Kentucky
Case No. 2021-00245
STAFF Second Set Data Requests
Date Received: November 18, 2021

STAFF-DR-02-015

REQUEST:

State whether Duke Kentucky is working with large industrials to lower energy usage or "shift" energy usage from peak to off peak usage, and if so, describe those efforts in detail. If not, explain why Duke Kentucky is not engaging in such efforts.

RESPONSE:

Duke Energy Kentucky's Large Account Management (LAM) team works with Duke Energy Kentucky's industrial and large commercial customers to help them use energy most effectively to serve their operations. Account Executives make customers aware of our offerings to help customers reduce their energy bills by implementing energy efficiency measures, taking advantage of the off-peak pricing provisions of our time of day transmission and distribution rates, and by taking advantage of our real time pricing rate schedule.

PERSON RESPONSIBLE: Michael Pahutski