**VERIFICATION**

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

The undersigned, Tammy Jett, being duly sworn, deposes and says that she has personal knowledge of the matters set forth in the foregoing data requests and they are true and correct to the best of her knowledge, information, and belief.

Tammy Jett

Tammy Jett, Affiant

Subscribed and sworn to before me by Tammy Jett on this 12th day of October, 2016.

Ruth M. Loccisano

NOTARY PUBLIC

My Commission Expires:

RUTH M. LOCCISANO
Notary Public, State of Ohio
My Commission Expires 06-18-2017

**VERIFICATION**

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

The undersigned, Daniel Hartmann, being duly sworn, deposes and says that he has personal knowledge of the matters set forth in the foregoing data requests and they are true and correct to the best of his knowledge, information, and belief.

Daniel Hartmann

Daniel Hartmann, Affiant

Subscribed and sworn to before me by Daniel Hartmann on this 19th day of October, 2016.

Adele M. Frisch

NOTARY PUBLIC

My Commission Expires: 1/5/2019

ADELE M. FRISCH
Notary Public, State of Ohio
My Commission Expires 01-05-2019

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**Duke Energy Kentucky**
**Case No. 2016-00268**
**Staff's Second Set Data Requests**
**Date Received: October 11, 2016**

**STAFF-DR-02-001**

**REQUEST:**

Refer to the Application, page 11, which states: "Estimated annual trucking cost of fly ash to the landfill and placement - $480,000 per year[,]" and to Duke Kentucky's Response to Commission Staff's First Request for Information ("Staff's First Request"), Item 1.a., which states: "The costs outlined are for bottom ash, not fly ash, as mentioned in the question." Confirm which is correct.

**RESPONSE:**

The costs are for bottom ash.

**PERSON RESPONSIBLE:** Daniel Hartmann

**Duke Energy Kentucky**
**Case No. 2016-00268**
**Staff's Second Set Data Requests**
**Date Received: October 11, 2016**

**STAFF-DR-02-002**

**REQUEST:**

Refer to Duke Kentucky's Response to Staff's First Request, Item 5. Explain the values shown in the untitled line between the lines titled "Project NPV 20 Years" and "Project NPV 40 Years."

**RESPONSE:**

This untitled line shows the difference in the 20 year NPV between the selected Option 2 and the other options.

**PERSON RESPONSIBLE:** Daniel Hartmann

**Duke Energy Kentucky**
**Case No. 2016-00268**
**Staff's Second Set Data Requests**
**Date Received: October 11, 2016**

**STAFF-DR-02-003**

**REQUEST:**

Refer to Duke Kentucky's Response to Staff's First Request, Item 6.b. Explain why "projections for the next 2 to 3 years" were used to determine escalation on a 20-year project.

**RESPONSE:**

The escalation referred to here is the escalation on the materials and labor for construction of the project only which will be occurring over the next 2 to 3 years.

**PERSON RESPONSIBLE:** Daniel Hartmann

**Duke Energy Kentucky**
**Case No. 2016-00268**
**Staff's Second Set Data Requests**
**Date Received: October 11, 2016**

**STAFF-DR-02-004**

**REQUEST:**

Refer to Duke Kentucky's Response to Staff's First Request, Items 8 and 12. Explain whether Duke Kentucky's permit will allow the un-encapsulated disposal of bottom ash in the landfill. If not, explain Duke Kentucky's plans to encapsulate the bottom ash.

**RESPONSE:**

Bottom ash does not require fixation in order to be a stable material to landfill, nor is it industry practice to do so. The East Bend Landfill permit thus allows for disposal of bottom ash in the landfill without requiring additional processes for "encapsulation" or fixation of bottom ash as it does for FGD scrubber sludge. Both the East Bend landfills are considered "encapsulated" in that the areas permitted to accept bottom ash have engineered liners and caps to contain and encapsulate any waste, including bottom ash, placed in the landfills. The fly ash and FGD scrubber sludge solids, however, as mentioned in Response to Staff's First Request, Items 8 and 12, are fixated together through the Poz-o-Tec making process because the FGD scrubber sludge needs to be fixated in order to make it a stable material to landfill. Fly ash happens to be used as part of the fixation process to fixate the FGD scrubber sludge because it is a very effective material in the fixation "recipe". Conversely, bottom ash cannot be used in the process because the necessary chemical reactions needed would not occur.

**PERSON RESPONSIBLE:** Tammy Jett

**Duke Energy Kentucky**
**Case No. 2016-00268**
**Staff's Second Set Data Requests**
**Date Received: October 11, 2016**

**STAFF-DR-02-005**

**REQUEST:**

Refer to Duke Kentucky's Response to Staff's First Request, Item 11. Provide a detailed explanation for the increases in the following direct-cost components:

a. Equipment Supply

b. Equipment Install

c. Concrete

d. Piping

e. Insulation

f. Electrical

**RESPONSE:**

a. Equipment Supply – The revised estimate includes costs for (2) new air receivers, (2) new air dryers, and a Carbon Dioxide fire suppression system. This equipment is directly in the path of the inclined section of the SFC which removes the bottom ash to the bunker outside the building. The original plan was to relocate the existing equipment to the new building next to the stack out pad. However, during outage planning meetings, it was discovered that the building location is directly beneath the crane lifting lane for a large boiler project occurring during the outage. Personnel will not be permitted to be inside the crane exclusion zone for approximately the first 6 weeks of the outage. It was

determined that the new building would need to be erected and operational prior to the beginning of the outage as there would not be sufficient time to complete it during the remaining outage duration. This necessitated purchasing new equipment so it can be installed prior to the outage as the existing equipment cannot be removed from service with the unit on line. The equipment supply was slightly offset by purchasing new electrical equipment which proved to be more cost effective than refurbishing and upgrading the existing equipment.

b. Equipment Install – There is a slight increase in installing the new equipment referenced above versus installing relocated equipment as parts that are shipped unassembled will need to be installed in the field. Primarily the difference in this component is increased demolition costs based on evolution of the design which provides for maintenance and personnel access. Also, costs were included to provide a barrier in the bottom of the boiler over the bottom ash hopper so workers can be protected from dropped objects from other work going on in the boiler during the outage.

c. Concrete – The layout of the new building was increased slightly to provide adequate room for maintenance access. The largest increase was due to the stackout pad sump which was not accounted for in the original estimate.

d. Piping – Design evolution accounts for some of the increase as clearance conflicts for maintenance and personnel access are identified. The largest portion of the increase is rerouting piping to avoid other projects and work areas needed for the outage in 2018.

e. Insulation – The increase in insulation is directly related to the increase in piping mentioned above.

f. Electrical – Adjustments were made to the material costs for the ground grid conductors to provide lead coated copper instead of bare copper. The increase in piping mentioned above directly influences an increase in heat tracing costs. The estimate has also been updated with the latest information regarding equipment locations, quantities, and ratings of electrical devices as the design has progressed over the point when the first estimate was completed.

**PERSON RESPONSIBLE:** Daniel Hartmann