





**KyPSC Case No. 2022-00040**  
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**DATA REQUEST**

**WITNESS**

**TAB NO.**

STAFF-DR-03-001

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**Duke Energy Kentucky**  
**Case No. 2022-00040**  
**STAFF Third Set Data Requests**  
**Date Received: June 7, 2022**

**STAFF-DR-03-001**

**REQUEST:**

Consider the hypothetical situation where a generation unit has been scheduled for a month long maintenance outage and during the course of the outage the utility cannot complete the maintenance work due to COVID-induced labor shortages and supply chain issues. Explain why the Commission should not consider the unit outage to be a forced outage, as defined in 807 KAR 5:056, Section 1(4), as opposed to a continued maintenance outage for the time extending beyond the scheduled outage time.

**RESPONSE:**

In relation to the hypothetical presented, the categories of planned vs. forced outage are defined by the North American Electric Reliability Corporation (NERC) Generating Availability Data System (GADS) Reporting instructions. GADS is a mandatory industry program for conventional generation units that are 20 MWs and larger.

*See: [https://www.nerc.com/pa/RAPA/gads/Pages/GeneratingAvailabilityDataSystem-\(GADS\).aspx](https://www.nerc.com/pa/RAPA/gads/Pages/GeneratingAvailabilityDataSystem-(GADS).aspx).*

The Commission should continue accept this reporting criteria as it has in the past and permit its jurisdictional utilities to continue to follow it. Duke Energy Kentucky previously informed the Commission of its utilization of NERC GADS reporting criteria in response to Commission-issued data requests in Case No. 2008-00287.

*See: [https://psc.ky.gov/PSCSCF/2008%20cases/2008-00287/20081031\\_Duke\\_Response.PDF](https://psc.ky.gov/PSCSCF/2008%20cases/2008-00287/20081031_Duke_Response.PDF)*

The Commission should not cause the Company to disregard these criteria or impose a different reporting/ categorization standard.

NERC GADS Data Reporting Instructions:

As noted in the response to STAFF-02-005, Duke Energy Kentucky utilizes the NERC GADS Reporting Instructions to define each outage type.

The current version of these instructions is located here:

[https://www.nerc.com/pa/RAPA/gads/DataReportingInstructions/2022\\_GADS\\_DRI.pdf](https://www.nerc.com/pa/RAPA/gads/DataReportingInstructions/2022_GADS_DRI.pdf)

Accordingly, Duke Energy Kentucky follows the guidance set forth in the above-referenced reporting instructions to differentiate between different types of Outages. Specifically, please refer to Section III (pages 9-16).

Each outage type is defined as either a Forced Outage or Scheduled Outage:

Forced Outage:

- Unplanned Forced Outage (U1) - Immediate
- Unplanned Forced Outage (U2) - Delayed
- Unplanned Forced Outage (U1) – Postponed
- Startup Failure (SF)

Scheduled Outage:

- Planned Outage (PO)
- Planned Outage Extension (PE)
- Maintenance Outage (MO)
- Maintenance Outage Extension (ME)

NERC GADS states (page 14): “A planned extension may be used only in instances where the original scope of work requires more time to complete than the estimated time. For example, if an inspection that is in the original scope of work for the planned outage takes longer than scheduled, the extra time should be coded as an extension (PE). However, if damage found during the inspection results in an extension of the outage, the extra time required to make repairs should be coded as a forced outage.”

Additionally, NERC GADS states (page 14-15): “GADS defines a planned outage extension as an extension of a Planned Outage (PO) beyond its estimated completion date. This means that at the start of the PO, the outage had an estimated duration (time period) for the work and a date set for the unit to return to service. All work during the PO is scheduled (part of the original scope of work) and all repair times are determined before the outage started.”

East Bend Specific:

In the case of the planned outage extension at the East Bend station, the delay in the operational return of the East Bend unit was “...due to COVID-induced labor shortages and supply chain issues”. See *STAFF-DR-03-001 Attachment*, Letter dated January 6, 2022. Thus, since this delay was caused by the original scope of work requiring more time to complete than the estimated time, it should be coded as a Planned Outage Extension per NERC GADS instructions.

The East Bend outage section of the response to STAFF-DR-01-015 has been updated to include the portion of the East Bend outage coded as PE (Planned Outage Extension) that was outside of the data period ending 10-31-2021.

Station Unit	Event Start	Event End	Event Duration Hrs	Event Duration Days	Eq Hrs	Eq MWh Amount	Event Type	Event Reduction (Size)	Cause Code	Event Description
East Bend 2	9/10/2021 23:02	11/21/2021 0:00	1,705.97	71.08	1,705.97	1,023,582	PO	600	4212	Planned Fall Outage
East Bend 2	11/21/2021 0:00	12/18/2021 21:28	669.47	27.89	669.47	401,682	PE	600	4212	Unit 2 Planned Fall Outage Extension for Turbine/Generator Work

Note that extension of this outage occurred outside of the current FAC time-period end date of 10-31-2021, as the portion coded as PE was from 11-21-2021 at 00:00 to 12-18-2021 at 21:28.

The East Bend Unit 2 maintenance outage scope of work included general outage equipment repairs, Boiler Feed Pump Turbine Valve replacement, relay replacement, and a dust migration project. In addition, the planned outage critical path work (the scope of work that determined the overall outage length) included the rewind of the unit’s Generator and replacement of the Low Pressure Turbine L minus 2 (L-2) blades, which represent the last (and largest) blades of each of the two double flow Low Pressure turbines. This critical path work was awarded to the Original

Equipment Manufacturer (OEM) vendor as part of a turn-key contract with Duke Energy Kentucky.

As explained in the Company's January 6, 2022 Letter, due to external vendor workforce constraints and availability limitations caused directly by COVID, the initial outage length needed to be extended. The primary drivers for the outage delays were mainly related to COVID outbreaks that impacted the labor resources and the quality of the vendor work performed. Throughout the outage, impacts related to the COVID pandemic have impacted vendor staffing to the point where the critical path of the outage needed to be extended and thus, the return date of the outage moved out. For example, the critical path of generator winding was adversely impacted due to a shortage of necessary craft skillset due to COVID infections. This caused delays in completing this critical work by at least two days (4 shifts). Likewise, on December 4, a vendor lost 13 millwrights due to COVID impacts on a night shift. This delayed critical path work activities until adequate resources were reestablished. Additionally, examples of vendor quality issues include a delay of the oil flush for the main Turbine/Generator caused by oil piping flange gasket leaks, requiring replacement and rework of the #10 Generator bearing seal after a failed quality check found improper clearances.

Duke Energy Kentucky took actions to support improvement of vendor performance, including a daily leadership conversation between Duke Energy Kentucky and the OEM to support quick resolution of performance issues. Additionally, a nightly call at 2100 was established to assess night shift vendor performance and to support additional quick resolution. Finally, Duke Energy Kentucky assigned additional technical and oversight resources to support improvement of vendor performance. Additional notifications to PJM were made that extended the outage to the actual date the unit first came back on-line (December 25). These outage requests were approved by PJM as maintenance outages.

The Company uses good utility practice in the maintenance of its generating units and in the outage planning process to reduce the length, frequency, and customer impact of scheduled outages. These practices include, but are not limited to, programs such as predictive and preventative maintenance, benchmarking studies, a focus on summer reliability, and availability outages. Duke Energy Kentucky times its maintenance outages for periods where historically, temperatures are mild, and load and market prices are reduced. In addition, Duke Energy Kentucky uses forward markets to hedge price exposure for periods where units are planned to be taken out of service for maintenance. The decision-making process used by Duke Energy Kentucky strives to maintain a high unit availability, accomplish the given maintenance, thereby generating energy at the lowest reasonable cost for its customers, consistent with good utility practice.

Coding this outage as a “forced outage” would be contrary to NERC GADS reporting guidance and, going forward, would insert uncertainty into NERC reporting as the Company would find itself in the untenable position of having to choose between following industry recognized and required reporting criteria and guessing what the Commission would define a particular outage during a hindsight review. The Commission should not impose two different reporting criteria on its jurisdictional utilities. Such a standard would unfairly penalize utilities and result in a hindsight/backward-looking view knowing a pandemic occurred on its maintenance practices at a generating station.

As this Commission has previously held:

“Hindsight cannot be used in evaluating the prudence of management's actions. Management must be judged on what was known or should have been known at the time of its decision. The burden of overcoming the presumption of managerial good faith falls on the party challenging it. Once this burden is met, however, management must demonstrate that its actions were reasonable and prudent.” *See Case No. 2002-00022, Proposed Adjustment of Wholesale Water Service Rates of the City of Pikeville, Kentucky* (Ky. PSC Oct. 18, 2002) at 9.



The Company did everything within its control to mitigate delays to the unit's return. The Company could not force vendors, whose trained personnel had contracted the virus to report to work without risking health of its own employees or the lives of those who were ill. Moreover, it would have been imprudent for the Company to insist the vendor staff its work with untrained and unskilled workers simply to attempt to expedite the unit's return to operation. Such a strategy would likely have resulted in greater risk of damage and longer outages. Duke Energy Kentucky has followed NERC GADS outage reporting instructions in categorizing this outage as a planned outage extension and feels penalizing the Company from categorizing an outage delay that is considered a planned or maintenance outage extension per industry-accepted NERC criteria as a forced event is punitive and unfair.

**PERSON RESPONSIBLE:**            John Swez  
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January 6, 2022

**VIA EMAIL: [PSCED@ky.gov](mailto:PSCED@ky.gov)**

Ms. Linda Bridwell  
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Kentucky Public Service Commission  
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Frankfort, Kentucky 40602-0615

**Re: Case No. 2021-00459**

In the Matter of the Verified Application of Duke Energy Kentucky, Inc. for Proposed Accounting and Fuel Adjustment Clause Treatment and for Declaratory Ruling

Dear Ms. Bridwell:

Duke Energy Kentucky, Inc., (Duke Energy Kentucky) hereby provides notice to the Kentucky Public Service Commission (Commission) that East Bend Unit 2 first returned to service on December 25, 2021. As is typical with the start-up of a coal-fired unit, start-up takes several days before the unit is capable of a steady state operation, and typically ramps up and down to ensure the unit is capable of full output.

As the Commission is aware, East Bend Unit 2 underwent a major planned outage during the Fall of 2021. The original dates were for the outage to start on Saturday, September 11 and for a return to service on Sunday, November 21 for an outage length of 72 days or approximately a 10.3-week outage. The unit was removed from service as planned at 22:03 EPT on September 10 but did not initially return on-line until 21:41 EPT on December 25, a little over a 1 month longer than initially planned due to a number of factors that will be explained.

The maintenance outage scope of work included general outage equipment repairs, Boiler Feed Pump Turbine Valve replacement, relay replacement, and a dust migration project. In addition, the planned outage critical path work (the scope of work that determined the overall outage length) included the rewind of the unit's Generator and replacement of the Low Pressure Turbine L minus 2 (L-2) blades, which represent the last (and largest) blades of each of the two double flow Low Pressure turbines. This critical path work was awarded to the Original Equipment Manufacturer (OEM) vendor as part of a turn-key contract with Duke Energy Kentucky.

Unfortunately, due to external vendor workforce constraints and availability limitations caused directly by COVID, the initial outage length needed to be extended. On October 25, Duke Energy Kentucky notified PJM of the extension that modified the end date outage to December 11, 2021. The primary drivers for the outage delays were mainly related to COVID outbreaks that

Ms. Linda Bridwell  
January 6, 2022  
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impacted the labor resources and the quality of the vendor work performed. Throughout the outage, impacts related to the COVID pandemic have impacted vendor staffing to the point where the critical path of the outage needed to be extended and thus, the return date of the outage moved out. For example, the critical path of generator winding was adversely impacted due to a shortage of necessary craft skillset due to COVID infections. This caused delays to completing this critical work by at least two days (4 shifts). Likewise, on December 4, a vendor lost 13 millwrights due to COVID impacts on a night shift. This delayed critical path work activities until adequate resources were reestablished. Additionally, examples of vendor quality issues include a delay of the oil flush for the main Turbine/Generator caused by oil piping flange gasket leaks, requiring replacement and rework of the #10 Generator bearing seal after a failed quality check found improper clearances.

Duke Energy Kentucky has taken the following actions to support improvement of vendor performance, include a daily leadership conversation between Duke Energy Kentucky and the OEM to support quick resolution of performance issues. Additionally, a nightly call at 2100 was established to assess night shift vendor performance and to support additional quick resolution. Finally, Duke Energy Kentucky assigned additional technical and oversight resources to support improvement of vendor performance. Additional notifications to PJM were made that extended the outage to the actual date the unit first came back on-line (December 25). These outage requests were approved by PJM as maintenance outages.

After the unit initially returned to service on December 25, the unit went back off-line mainly due to the addition of balance shots in the Turbine/Generator to improve vibration, as is common after the scope of work that was undertaken during this outage. As of the writing of this document, the unit is currently on-line and capable of full output.

If you have any additional questions, please do not hesitate to contact me.

Respectfully submitted,

/s/Rocco D'Ascenzo

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