


VERIFICATION


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

The undersigned, John A. Hill, Jr., Director, Integrity Management, Engineering and Growth, 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.



John A. Hill, Jr., Affiant

Subscribed and sworn to before me by John A. Hill, Jr. on this 8th day of AUGUST,
2016.



NOTARY PUBLIC

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

My Commission Expires: 1/5/2019

VERIFICATION

STATE OF OHIO)
) SS:
COUNTY OF HAMILTON)

The undersigned, James Ziolkowski, Director of Rates & Regulatory Planning, 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.


James Ziolkowski, Affiant

Subscribed and sworn to before me by James Ziolkowski on this 8th day of AUGUST, 2016.

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


NOTARY PUBLIC

My Commission Expires: 1/5/2019

VERIFICATION

STATE OF OHIO)
) SS:
COUNTY OF HAMILTON)

The undersigned, John D. Perkins, Senior Engineer, being duly sworn, deposes and says that he has personal knowledge of the matters set forth in the foregoing testimony, and that the answers contained therein are true and correct to the best of his knowledge, information and belief.



John D. Perkins, Affiant

Subscribed and sworn to before me by John D. Perkins on this 8th day of AUGUST, 2016.

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



NOTARY PUBLIC

My Commission Expires: 1/5/2019

VERIFICATION

STATE OF OHIO)
) SS:
COUNTY OF HAMILTON)

The undersigned, Gary J. Hebbeler, GM of Gas Field & System Operations, being duly sworn, deposes and says that he has personal knowledge of the matters set forth in the foregoing testimony, and that the answers contained therein are true and correct to the best of his knowledge, information and belief.

Gary J. Hebbeler
Gary J. Hebbeler, Affiant

Subscribed and sworn to before me by Gary J. Hebbeler on this 8th day of AUGUST, 2016.

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

Adelle M. Frisch
NOTARY PUBLIC

My Commission Expires: 1/5/2019

VERIFICATION

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

The undersigned, Peggy Laub, Director of Rates & Regulatory Planning, 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.

Peggy Laub

Peggy Laub, Affiant

Subscribed and sworn to before me by Peggy Laub on this 8th day of AUGUST, 2016.

Adele M. Frisch

NOTARY PUBLIC

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

My Commission Expires: 1/5/2019

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STAFF-DR-01-001

REQUEST:

Refer to the Direct Testimony of John A. Hill, Jr. ("Hill Testimony"), page 4, lines 1-3, that state, "The purpose of the Project is to construct necessary capacity to the Duke Energy Kentucky natural gas delivery system to meet anticipated demand and to provide greater reliability to the overall system."

- a. Provide the projected demand and the existing demand on Duke Kentucky's system. Include support for all calculations and underlying assumptions.
- b. Describe the existing capacity and proposed capacity of Duke Kentucky's system. Include support for all calculations and underlying assumptions.

RESPONSE:

The SynerGEE software that Duke Energy Kentucky uses to model its system represents its interconnected network of pipelines. The model predicts pressure and flow, as well as other attributes of the gas traveling through the system. As this project is directly interconnected to Duke Energy Kentucky's Boone County high pressure distribution system, it has provided demand and capacity numbers specifically for this area. The network model is the basis for the following calculations related to capacity and demand for a peak demand hour.

- a. Boone County High Pressure Gas System:

Approximate existing demand: 1,500 MCFH (90% of available capacity)

Approximate projected demand: $1,500 + 150 = 1,650$ MCFH

1,500 homes (See Staff-DR-01-002) * 100 CFH (peak hour usage) = 150 MCFH

b. Boone County High Pressure Gas System:

Approximate existing capacity at peak flow: 1,650 MCFH

Proposed available capacity at peak flow: 1,950 MCFH (300 MCFH from new pipeline).

PERSON RESPONSIBLE: John A. Hill, Jr.

STAFF-DR-01-002

REQUEST:

Refer to the Hill Testimony, page 4, lines 19-20. Provide Duke Kentucky's annual customer counts for all classes for the indicated area for the ten-year period referenced, and estimates of annual customer counts for 2016 through 2021.

RESPONSE:

Please see Staff-DR-01-002 Attachment, which shows the actual and projected numbers of Duke Energy Kentucky, Inc., gas accounts in Boone County as of December for the years 2006 through 2021.

PERSON RESPONSIBLE: James E. Ziolkowski

DUKE ENERGY KENTUCKY
 NUMBER OF GAS ACCOUNTS AT DECEMBER 31
 BOONE COUNTY

<u>MONTH/YEAR</u>	<u>RESIDENTIAL</u>	<u>% Change</u>	<u>COMMERCIAL</u>	<u>% Change</u>	<u>INDUSTRIAL</u>	<u>% Change</u>	<u>DPA</u>	<u>% Change</u>	<u>INTERRUPTIBLE TRANS</u>	<u>% Change</u>	<u>Grand Total</u>	<u>% Change</u>
Dec-06	22,112		2,269		119		98		9		24,607	
Dec-07	22,712	2.7%	2,337	3.0%	120	0.8%	98	0.0%	9	0.0%	25,276	2.7%
Dec-08	23,041	1.4%	2,376	1.7%	119	-0.8%	113	15.3%	11	22.2%	25,660	1.5%
Dec-09	23,153	0.5%	2,391	0.6%	117	-1.7%	112	-0.9%	10	-9.1%	25,783	0.5%
Dec-10	23,386	1.0%	2,426	1.5%	114	-2.6%	102	-8.9%	11	10.0%	26,039	1.0%
Dec-11	23,570	0.8%	2,428	0.1%	114	0.0%	101	-1.0%	11	0.0%	26,224	0.7%
Dec-12	23,821	1.1%	2,427	0.0%	116	1.8%	99	-2.0%	11	0.0%	26,474	1.0%
Dec-13	24,178	1.5%	2,458	1.3%	118	1.7%	101	2.0%	11	0.0%	26,866	1.5%
Dec-14	24,362	0.8%	2,478	0.8%	116	-1.7%	102	1.0%	10	-9.1%	27,068	0.8%
Dec-15	24,668	1.3%	2,504	1.0%	113	-2.6%	102	0.0%	10	0.0%	27,397	1.2%
Jun-16	24,748	0.3%	2,439	-2.6%	112	-0.9%	97	-4.9%	10	0.0%	27,406	0.0%
2006 - 2016 Change		11.9%		7.5%		-5.9%		-1.0%		11.1%		11.4%
2006-2016 Average Annual Change		1.1%		0.7%		-0.6%		0.1%		1.4%		1.1%
<u>ESTIMATED FUTURE COUNTS BASED ON AVERAGE ANNUAL CHANGE</u>												
Dec-16	24,948	1.1%	2,522	0.7%	112	-0.6%	102	0.1%	10	1.4%	27,695	1.1%
Dec-17	25,231	1.1%	2,541	0.7%	112	-0.6%	102	0.1%	10	1.4%	27,996	1.1%
Dec-18	25,517	1.1%	2,560	0.7%	111	-0.6%	102	0.1%	10	1.4%	28,300	1.1%
Dec-19	25,807	1.1%	2,578	0.7%	110	-0.6%	102	0.1%	11	1.4%	28,608	1.1%
Dec-20	26,100	1.1%	2,597	0.7%	110	-0.6%	102	0.1%	11	1.4%	28,920	1.1%
Dec-21	26,396	1.1%	2,616	0.7%	109	-0.6%	102	0.1%	11	1.4%	29,234	1.1%

STAFF-DR-01-003

REQUEST:

State whether the proposed construction will make natural gas available to areas that currently do not have access to gas service. If so, provide an estimate of new customer additions and associated growth in sales volumes for 2016 through 2021.

RESPONSE:

This project will make gas available to some areas in Boone County that do not currently have gas service. While Duke Energy Kentucky does not have a separate estimate of new customers in areas that are not currently served with gas, the projection of approximately 1,500 new homes in its Boone County system (see STAFF-DR-01-002) from 2016 - 2021 will have an increased sales volume of about 100,000 MCF per year.

Answering further, in the past year, we have received requests to serve seven new residential developments in this service area:

- Triple Crown Country Club
- Ballyshannon
- North Walton Pointe
- Hawks Landing
- Harmony
- Greens of Brigadoon
- Cauthen Run

PERSON RESPONSIBLE: John A. Hill, Jr.

STAFF-DR-01-004

REQUEST:

Refer to the Hill Testimony, page 4, lines 20-21, that state, "Winter pressures continue to decline in this area as Boone County's population grows." Explain whether Duke Kentucky has experienced any customer outages in this area due to inadequate system capacity to meet system demand.

RESPONSE:

To date, Duke Energy Kentucky has not experienced any customer outages related to inadequate system capacity as it has made other system improvements to meet its obligation to serve customers. One such improvement is the installation of a temporary regulator in an effort to support pressures in its Richwood high pressure system. Even with this temporary regulator, the system is operating around 90% of its design capacity during peak demand periods.

PERSON RESPONSIBLE: John A. Hill, Jr.

REQUEST:

Refer to the Hill Testimony, page 4, line 23, through page 5, line 2. Provide the annual volume of gas consumed by the indicated customer over the ten year period for which information is provided in Item 2 of this request, as well as the customer's anticipated load growth, if any, for 2016 through 2021.

RESPONSE:

CONFIDENTIAL PROPRIETARY TRADE SECRET

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

This response is being provided under a petition for confidential treatment.

PERSON RESPONSIBLE: Legal

STAFF-DR-01-006

REQUEST:

Refer to the Hill Testimony, page 5, line 10, that states, "This pipeline will support the anticipated growth in this area." Provide all calculations and work papers used for the design of the pipeline.

RESPONSE:

Using the system model as described in STAFF-DR-01-001, the inlet pressure to the new pipeline from the existing UL03 pipeline will be about 140 PSIG. The anticipated flow through the new pipeline at this pressure is about 300 MCFH. The inlet pressure to the Richwood High Pressure system from the new pipeline will be about 140 PSIG and the outlet from this station is 50 PSIG. The inlet pressure at the connection to the existing AM03 pipeline from the new pipeline will also be about 140 PSIG.

PERSON RESPONSIBLE: John A. Hill, Jr.

PUBLIC STAFF-DR-01-007

REQUEST:

Refer to the Hill Testimony, page 5, lines 13-14, concerning the estimated cost of construction for the project. State all assumptions, show all calculations, and provide all work papers used to derive the estimated project cost. Where such calculations and work papers are in Microsoft Excel worksheet format, provide an electronic copy in Microsoft Excel format.

RESPONSE:

CONFIDENTIAL PROPRIETARY TRADE SECRET (As to Attachment Only)

Please see STAFF-DR-01-007 Confidential Attachment for the assumptions upon which certain components of the overall project cost are predicated. In addition to these assumptions, Duke Energy Kentucky has relied upon confidential responses to requests for proposal as well as its experience in construction projects, including, but not limited to, property acquisition. Duke Energy Kentucky's budget continues to be adjusted as the project progresses and the scope is refined. Since the initial filing in early May, Duke Energy Kentucky has been able to lower its easement cost estimate. It has also recognized the need to include contingency dollars in this budget. Therefore, the current, estimated cost of this project has changed to:

Task	Total
Design	\$0.8M
Land	\$1.3M
Construction	\$9M
Material	\$1.8M
Contingency	\$0.6M
	<u>\$13.5M</u>

STAFF-DR-01-007 Confidential Attachment is being provided under a petition for confidential treatment.

PERSON RESPONSIBLE: John Perkins

CONFIDENTIAL PROPRIETARY TRADE

SECRET

ATTACHMENT STAFF-DR-01-007

FILED UNDER SEAL

STAFF-DR-01-008

REQUEST:

Refer to the Hill Testimony, page 5, line 18, and page 6, lines 1-2, that state, "Duke Energy Kentucky compared these figures to other recently completed projects and it is confident in the estimate being provided." Provide details of all projects used as a comparison for the cost estimate. Include the project construction dates, general locations, pipeline size and length, and the total project costs itemized by design, land, construction, and material.

RESPONSE:

Please see Staff-DR-01-008 Attachment.

PERSON RESPONSIBLE: John Perkins

Recent Duke Energy Gas Operations Large Projects

Project	Location	Year	Length in miles	Size	Estimate	Cost/ft	Notes
Zimmer	Moscow, OH	2012	2.30	8"	\$3,183,714	\$262	Actual Cost
Big Bone Pipeline	Richwood, KY	2017	10.25	12"	\$13,500,000	\$249	Proposed cost
Bethel (C338, 340, CG11)	Bethel, OH	2008	17.00	12"	\$19,016,528	\$212	Actual Cost
US-27 - Griffin	Falmouth, KY	2015	1.53	8"	\$1,330,000	\$164	Actual Cost

STAFF-DR-01-009

REQUEST:

Refer to the Hill Testimony, page 6, lines 5-8, that state, "The Company anticipates that there will be minimal (<\$5,000 per year) incremental operational and maintenance expense ("O&M") associated with the ongoing operation of the new pipeline except for required periodic inspections and/or testing." State all assumptions, show all calculations, and provide all work papers used to derive the estimated incremental O&M costs. Where such calculations and work papers are in Microsoft Excel worksheet format, provide an electronic copy in Microsoft Excel format.

RESPONSE:

Inspections – Duke Energy Kentucky anticipates spending approximately 40 hours per year inspecting and performing corrosion reads and other related inspections on this pipeline.

Maintenance and leak surveys – Duke Energy Kentucky has estimated that it will spend 40 hours per year to maintain its valves, stations and to perform annual leak surveys.

PERSON RESPONSIBLE: John A. Hill, Jr.

STAFF-DR-01-010

REQUEST:

Refer to the Direct Testimony of Gary J. Hebbeler ("Hebbeler Testimony"), page 4, lines 16-20. Provide the Maximum Allowable Operating Pressure ("MAOP") of the proposed pipelines and the MAOP of the existing pipelines, UL03 and AM03.

RESPONSE:

The current MAOP of the existing lines, UL03 and AM03, is 266 psig and 200 psig, respectively. Since the new proposed steel pipeline will be connected to UL03, the new proposed steel pipeline will be limited to the same MAOP as UL03, which is 266 psig. However, the new pipeline will be tested to allow for a rating of 500 psig to accommodate any future pressure increases to the system. The MAOP of the new eight-inch plastic pipe will be 60 psig.

PERSON RESPONSIBLE: Gary J. Hebbeler

STAFF-DR-01-011

REQUEST:

Refer to the Hebbeler Testimony, page 5, lines 17-20, that state, "The route is based upon best available information at the time, acknowledging that Duke Energy Kentucky must still complete negotiations and acquisitions for private easements where applicable along the route." Describe the status of Duke Kentucky's negotiations and acquisitions of private easements. Include the number of private easements necessary for the project, the number of private easements obtained to-date, and whether Duke Kentucky anticipates any changes to the project scope, timeline, or estimated cost as a result of its current status for obtaining private easements.

RESPONSE:

Duke Energy Kentucky is still in the process of negotiating and acquiring 98 easements along the route. Twelve easements have been obtained to date. Duke Energy Kentucky does not anticipate any major changes to the route submitted. However, minor adjustments may be necessary to incorporate property owner requirements resulting from negotiations. Currently, the easement acquisition is on schedule to construct the pipeline in 2017 and the projected cost is in line with the budget.

PERSON RESPONSIBLE: Gary J. Hebbeler

STAFF-DR-01-012

REQUEST:

Refer to the Hebbeler Testimony, page 6, lines 4-6. Explain whether Duke Kentucky anticipates any opposition for its acquisition of private easements for the proposed pipelines.

RESPONSE:

Duke Energy Kentucky's preliminary assessment anticipates limited amount of opposition for the proposed pipeline easement acquisition.

PERSON RESPONSIBLE: Gary J. Hebbeler

STAFF-DR-01-013

REQUEST:

Refer to the Direct Testimony of Peggy A. Laub ("Laub Testimony"), page 3 lines 9-12.

- a. Provide the proposed amount of Allowance for Funds Used During Construction "(AFUDC)" for the proposed pipeline and explain whether it is part of the \$13.5 million estimate.
- b. Provide and explain the AFUDC rates that are to be applied for the construction of the proposed pipeline.

RESPONSE:

- a. The \$13.5 million estimate does not include any amounts for AFUDC.
- b. Duke Energy Kentucky will use the actual AFUDC rates in effect at the time of the actual construction expenditures. Duke Energy Kentucky calculates its AFUDC rate monthly in accordance with the FERC Code of Federal Regulations. See Staff-DR-01-013 Attachment for the actual AFUDC rates that were calculated for June 2016 and January 2016 for Duke Energy Kentucky gas projects. The 10.375% rate for the return on equity was approved in Case No. 2009-00202. As can be seen from the calculation, the AFUDC rate can vary substantially by month due to the impact of short-term debt in the FERC formula. If the Company's short-term debt exceeds its balance in Construction Work in Progress, the AFUDC rate for that month will be the same as the short-term debt rate.

PERSON RESPONSIBLE: Peggy Laub

**DEK-Gas & Common
 Computation of AFUDC Rate
 By Order No. 561 Method
 For the Month of June 2016**

	<u>AMOUNT</u> (1)	<u>CAPITALIZATION RATIO</u> (2)	<u>COST RATES</u> (3)	<u>S/W</u> (4)	<u>WEIGHTED COST RATES FOR GROSS AFUDC RATE</u> (5)	<u>RATE TO BE USED GROSS</u>	
						<u>%</u>	<u>RATIO</u>
Short-Term Debt(S)	0		0.000 x	0.00% =	0.00000		
Long-Term Debt	363,050,364	46.12% x	4.096 x	100.00% =	0.01889	1.89	25.30
Preferred Stock	0	0.00% x	0.00 x	100.00% =	0.00000		
Common Equity	<u>424,148,702</u>	<u>53.88% x</u>	10.375 x	100.00% =	<u>0.05590</u>	<u>5.58</u>	<u>74.70</u>
Total Capitalization	787,199,066	100.00%					
AFUDC Rate					<u><u>0.07479</u></u>	7.47	<u><u>100.00</u></u>
CWIP	<u><u>43,654,127</u></u>						

**DEK-Gas & Common
 Computation of AFUDC Rate
 By Order No. 561 Method
 For the Month of January 2016**

	<u>AMOUNT</u> (1)	<u>CAPITALIZATION RATIO</u> (2)	<u>COST RATES</u> (3)	<u>S/W</u> (4)	<u>WEIGHTED COST RATES FOR GROSS AFUDC RATE</u> (5)	<u>RATE TO BE USED GROSS</u>	
						<u>%</u>	<u>RATIO</u>
Short-Term Debt(S)	47,240,000		0.600 x	100.00% =	0.00600		
Long-Term Debt	319,027,488	43.90% x	4.096 x	0.00% =	0.00000	0.60	100.00
Preferred Stock	0	0.00% x	0.00 x	0.00% =	0.00000		
Common Equity	<u>407,726,047</u>	<u>56.10% x</u>	10.375 x	0.00% =	<u>0.00000</u>	<u>0.00</u>	<u>0.00</u>
Total Capitalization	726,753,535	100.00%					
AFUDC Rates					<u>0.00600</u>	0.60	100.00
CWIP	<u>39,542,502</u>						

STAFF-DR-01-014

REQUEST:

Refer to the Direct Testimony of Charles R. Whitlock ("Whitlock Testimony"), page 5, lines 3-6, that state, "The project will require two pressure regulating stations. The station at Richwood Church Road will reduce the pressure to sixty pounds per square inch gauge ("PSIG") for the Richmond distribution system. The east regulating station will provide over pressurization for AM-03." Provide the upstream pressure from which the station at Richwood Church Road will reduce to 60 PSIG.

RESPONSE:

The inlet/upstream pressure at the Richwood Church Road regulating station will be approximately 140 PSIG on a peak demand day.

PERSON RESPONSIBLE: John A. Hill, Jr.

STAFF-DR-01-015

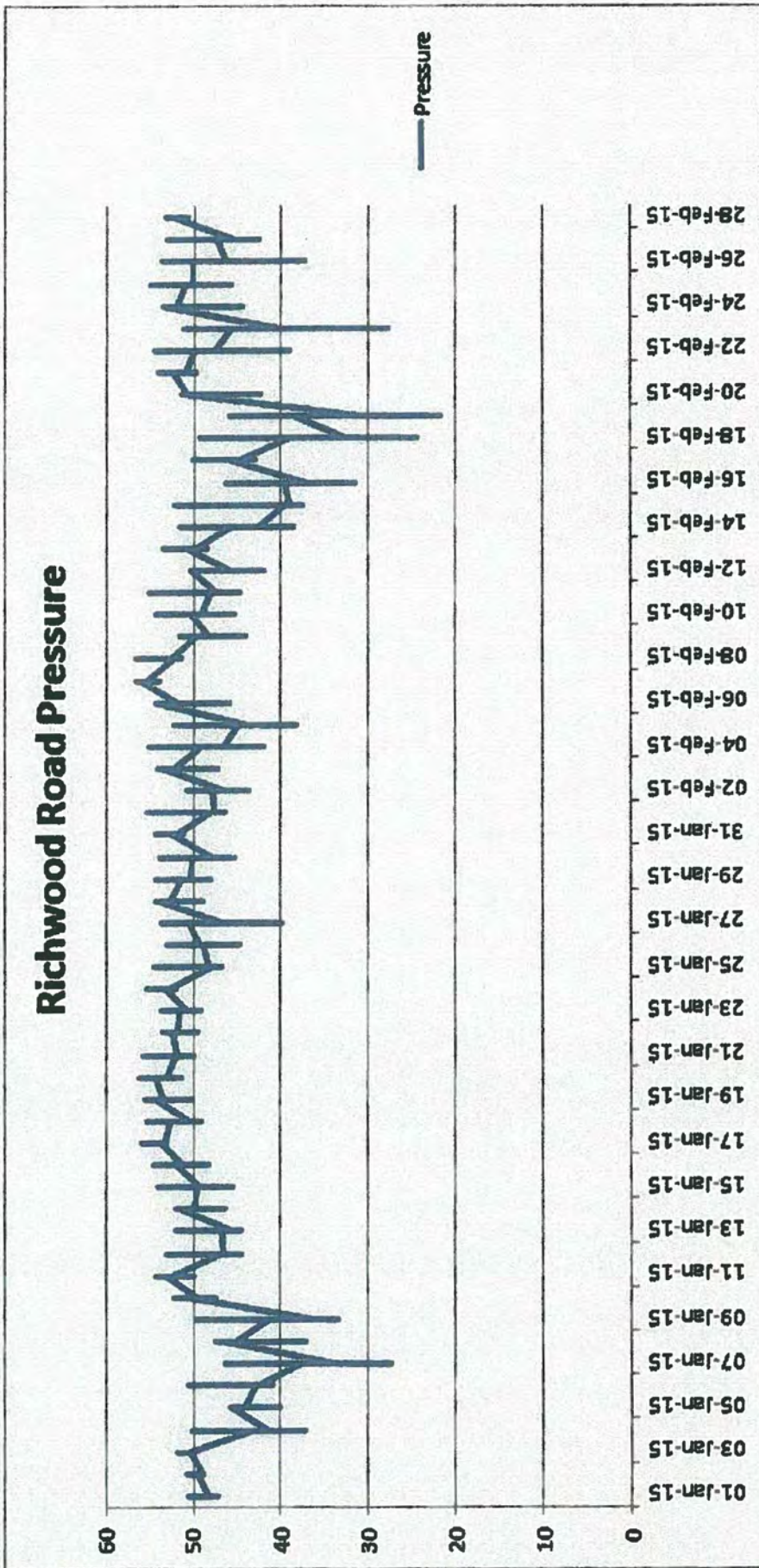
REQUEST:

Refer to the Whitlock Testimony, page 5, lines 21-23. Describe the low pressures during times of high consumption and provide the normal operating pressure in PSIG for this area.

RESPONSE:

See Staff-DR-01-015 Attachment, which shows the gas pressure during peak usage in the winter of 2015, in Richwood, Kentucky. The normal operating pressure is approximately 55 PSIG. The low pressure seen in this area was approximately 21 PSIG.

PERSON RESPONSIBLE: John A. Hill, Jr.



STAFF-DR-01-016

REQUEST:

Refer to the Whitlock Testimony, page 6, lines 18-19, that state, "This project is one that has been on the Company's planning horizon since 2007." Explain why the project is now being addressed after it was identified in 2007.

RESPONSE:

Due to the economic downturn, load growth was less than originally expected between 2008 and 2015. Since 2015, the growth in Boone County has started to increase again and as a result, system improvements are needed to accommodate these added gas loads.

PERSON RESPONSIBLE: John A. Hill, Jr.

STAFF-DR-01-017

REQUEST:

Refer to the Approval of the Kentucky Heritage Council filed as a supplement to Duke Kentucky's application on July 14, 2016; the CSX Railroad Crossing Permit files as a supplement to Duke Kentucky's application on July 12, 2016; the Approval of the Boone County Encroachment Permit filed as a supplement to Duke Kentucky's application on June 2, 2016; and the Approval of the Stream Construction Permit by the Department of Environmental Protection, Division of Water filed as a supplement to Duke Kentucky's application on May 26, 2016. Describe any changes to the project scope, timeline, or estimated project costs as a result of any conditions or requirements of the aforementioned permits and approvals.

RESPONSE:

Boone County's encroachment permit will require Duke Energy Kentucky to drill under all county street crossings but will have minimal impact on the project scope, timeline, and cost.

Duke Energy Kentucky does not expect any impacts to the scope, timeline, or cost due to the regular conditions described in other permits.

PERSON RESPONSIBLE: John Perkins