DATA REQUEST

KPSC_RH_001 Refer to the Direct Testimony of Michael G. Lasslo ("Lasslo"), page 8, line 3. Mr. Lasslo states that Kentucky Power is requesting authority to perform five improvements at the Wooton Substation. On page 8, line 15, Mr. Lasslo asserts the proposed work at the Wooton Substation will allow for the termination of the rebuilt Hazard-Wooton 161 kV line. When asked if the Wooton substation improvements are required by the proposed line rebuild, Mr. Lasslo answers on page 8, line 21 , "No. Upgrading the legacy engineering elements to current design standards is not directly required by, or associated with, the transmission line rebuild."

a. Reconcile this testimony with Kentucky Power's statement that four of the five requested Wooton substation improvements are required to implement the approved Baseline Project.

b. Explain why, if the Wooton substation improvements are required for the rebuilt line to function as required, they were not designated as Baseline projects.

RESPONSE

a. The referenced statements are not inconsistent. Kentucky Power nevertheless acknowledges the statement in Mr. Lasslo's testimony was imprecise and caused confusion.

Many projects, particularly smaller ones, address both Baseline and Supplemental needs. Mr. Lasslo's testimony that the four Wooton Substation project elements identified in the motion for rehearing were not "*directly* required, or associated with, the transmission line rebuild" was intended to convey the fact that the upgrades were not specifically identified as the solution presented by Kentucky Power to PJM to remedy the PJM-identified thermal violations that in large part gave rise to the 161 kV line rebuild and the new Hazard Substation transformer.

The identified statement in the motion for rehearing was intended to convey the fact that four Wooton Substation project elements must be upgraded to current design, operational, and reliability standards to enable the rebuilt transmission line and the new Hazard Substation

transformer (the Baseline Projects approved by the Commission) to be implemented[1] and to function as required.[2]

b. As outlined in PJM Manual 14C, Baseline upgrade projects are "projects primarily required to eliminate base-case reliability criteria violations found in the PJM Regional Transmission Expansion Plan." Conversely, Supplemental upgrade projects are "projects originated by the Transmission Owner that are not driven by an applicable PJM criterion.[3]" Supplemental upgrade projects therefore encompass any system need not directly approved by PJM.

Many projects, particularly smaller ones, address both Baseline and Supplemental needs. Kentucky Power, like other American Electric Power Company, Inc. affiliates, examines projects in their entirety, and in the case of smaller upgrades required by both a Baseline and a Supplemental need, the Company generally categorizes the project based upon the predominant need.

For example, as explained in subpart (a) above, the four Wooton Substation projects identified in Kentucky Power' motion for rehearing are intended to permit the Baseline Projects to be implemented and function as required. But the same remote end relaying upgrades at Wooton Substation identified in the Company's motion for rehearing are required to accommodate the replacement of Breaker M at Hazard Substation, which in turn is a Supplemental Project. Their designation as a Supplemental Project does not eliminate their relation to the Baseline requirements, or make their designation as a Supplemental Project inaccurate.

Witness: Michael G. Lasslo
Kamran Ali

---

[1] Motion for Rehearing at 7 (Noting that the four project elements "at the Wooton Substation are similarly required to implement the approved Baseline Projects….")

[2] Motion for Rehearing at 6 (Noting that without the four identified Wooton Substation project elements "the rebuilt line will be unable to function as required.")

[3] PJM Manual 14C: Generation and Transmission Interconnection Facility Construction, Revision: 12, Effective Date: June 22, 2017, Sections 6.1 and 6.2.

DATA REQUEST

KPSC_RH_002 Refer to the Lasso Testimony, page 9, line 18. When asked to describe the improvements to the Hazard Substation that are directly related or required by the transmission line rebuild, Mr. Lassie states that the work associated with replacing the existing 161 /138 kV single phase transformer with the new three-phase transformer is related to and required by the line rebuild.
a. Reconcile this testimony with Kentucky Power's assertion that five of the requested 46 projects to the Hazard substation are required to implement the Commission-approved Baseline projects.
b. Explain why, if the five improvements to the Hazard substation are necessary for the implementation of the Baseline project, they were not designated as Baseline projects.

RESPONSE

Please refer to the Company's response to KPSC_RH_01. The same rationale is applicable to the information requested in this question. The Company further states as follows:

A The referenced statements are not inconsistent. Kentucky Power nevertheless acknowledges the statement in Mr. Lasslo's testimony was imprecise and caused confusion.

Mr. Lasslo testified beginning at line 18 on page 9 of his direct testimony:

> Work associated with the replacement of the existing 161/138 kV single phase transformer with a new three phase 161/138 kV transformer, like the transmission rebuild, *addresses PJM identified thermal violations and is directly related to or required by the Proposed Rebuild*.

(emphasis supplied). Only the replacement of the existing 161/138 kV single phase transformers with a new three phase 161/138 kV transformer was required to address the PJM-identified thermal violations and thus *directly* required. But to replace the existing transformer with the new and larger three phase transformer it is necessary to relocate both the 161 kV circuit breaker pointing toward Wooton Substation and 138 kV capacitor bank and switcher BB to provide sufficient space for the new transformer. Although these two Project elements are not directly required to address the thermal violation, they are "required to implement the Commission-approved Baseline Projects" as explained in the motion for rehearing.

Further, the five Hazard Substation project elements identified in the Company's Motion for Rehearing must be upgraded to current design, operational, and reliability standards to enable the rebuilt transmission line and the new Hazard Substation transformer (the Baseline Projects approved by the Commission) to be implemented[1] and to function as required.[2] Substation "as required to implement the Commission-approved Baseline Projects….")

b. See the Company's response to KPSC RH_01(b).

Although required to permit the Baseline project elements to be implemented and to function as required as described in subpart (a) above, the replacement of obsolete equipment typically is categorized as a Supplemental project. This is the case even when the upgrade also is being implemented in connection with moving the equipment to make room for a Baseline project element. The designation of the five Hazard Substation project elements as Supplemental Project elements does not eliminate their relation to the Baseline requirements, or make their designation as a Supplemental Project inaccurate.

Witness: Michael G. Lasslo
Kamran Ali

[1] Motion for Rehearing at 7 (Noting that the Kentucky had identified the five project elements at the Hazard Substation "as required to implement the Commission-approved Baseline Projects….")

[2] Motion for Rehearing at 6 (Noting that without the five identified Hazard Substation project elements "the rebuilt line will be unable to function as required.")

DATA REQUEST

KPSC_RH_003 Refer to the Lassie Testimony of Michael G. Lassie, page 10, line 11. Mr. Lassie states that thermal violations on the Hazard-Wooton 161 kV line and the 161/138 kV transformer were identified as part of PJM's annual RTEP process and this is how Kentucky Power identified the need for the project.
a. Explain whether the phrase "the project" references the entire project as a whole or only the Baseline portion of the project. b. If the phrase refers only to the Baseline portion of the project, explain specifically how Kentucky Power came to identify the need for the Supplemental portion of the project.
c. Explain whether the thermal violations will be resolved by the Baseline portion of the project.
d. If not, identify which portions of the Supplemental project are necessary to address the thermal violations and explain why those portions were not designated as Baseline.

RESPONSE

a. The term project as used in Company Witness Lasslo's testimony beginning at page 10, line 11, is limited to the transmission line rebuild and replacement of the 161/138 kV Transformer #3 (single phase units) at Hazard station with a new 161/138 kV three phase transformer. That is, it refers to the Baseline portion of the project.

b. In general, Kentucky Power identifies and ranks Supplement Project elements using three key factors: Asset Condition, Historical Performance, and Future Risk. The three factors also are used to score and rank each project once an asset is identified as being in need of being replaced. In addition, a project element may be accelerated if doing so in conjunction with a Baseline project or a higher-ranked Supplemental project element will permit Kentucky Power to limit total mobilization and related costs, and to limit the number of outages. The Company's goal in grouping work is to perform the work in the most cost-effective and efficient manner, and thereby limit the costs, disruptions, and inconveniences ultimately borne by Kentucky Power's customers. Please see Attachment 1 to the Company's response to AG_01 filed on January 29, 2018 ("AEP Guidelines for Transmission Owner-Identified Needs") for a more detailed explanation of the methodology employed.

Also, the "Hazard 161 kV Area Improvement Plan" attached as Exhibit 15 to the Company's application, provides additional information on the identified need for the Supplemental Project elements.

3c-3d. For the reasons explained in the Company's responses to KPSC_RH_01(a) and KPSC_02(a), and pages 6-7 of Kentucky Power's motion for rehearing, this request cannot be

answered "yes" or "no." The Baseline portion of the project, *along with the associated Supplemental components* identified at pages 6-7 of Kentucky Power's motion for rehearing, will address the identified thermal issues.

The Baseline Projects and nine Supplemental Project elements identified in Kentucky Power's motion for rehearing alone fail to address all of needs identified at the two stations. The other Supplemental project elements are required to address all of the engineering, asset condition, performance and future risk (reliability) needs at the two stations. Failing to implement these project elements at this time will increase the risk of operational failure and the cost to replace this equipment in the future.

Witness: Michael G. Lasslo
Kamran Ali

Kentucky Power Company
KPSC Case No. 2017-00328
Commission Staff's First Re-Hearing Set of Data Requests
Dated May 9, 2018

DATA REQUEST

KPSC_RH_004 Refer to the Lassie Testimony, page 15, line 22, which discusses benefits provided by the project. One of the benefits listed is to provide Kentucky Power increased capacity to serve future load. However, in Case No. 2017-00179, Kentucky Power states that "proposed rates and tariff changes are required: (a) To recover annual revenue lost as a result of the decline in the company's load since September 30, 2014."3 Reconcile these two statements.

RESPONSE

The referenced statements are not mutually exclusive. At bottom the first statement is backward-looking and the second statement is forward-looking.

In conformity with the Company's regulations, Case No. 2017-00179 was based on an historic test year ended February 28, 2017 and the statement reflected the fact the Company's load had declined in the interim. But Case No. 2017-00179 also contained extensive testimony by Company Witness Satterwhite and Company Witness Hall concerning the importance of Kentucky Power's economic development efforts in reversing the load loss that, in part, required the filing of the rate case. See e.g. Direct Testimony of Matthew J. Satterwhite at 10-11; Rebuttal Testimony of Matthew J. Satterwhite at R1-R4; Direct Testimony of Brad N. Hall at 4-6. Indeed, Company Witness Satterwhite repeatedly emphasized at the rate case hearing the importance of "growing the denominator" through economic development as a means of mitigating future increases. See e.g. Transcript of December 6, 2017 Hearing at 76, 120-121, 124, 160-162, 176; Transcript of December 7, 2017 Hearing at 398, 463.

Company Witness Lasslo's testimony that one of the multiple benefits of the Hazard-Wooton 161 kV transmission line rebuild was its ability to support future load growth is consistent with Kentucky Power's efforts, as detailed in the rate case, to "grow the denominator" to benefit all customers by reversing the decline in the Company's load. Indeed, Mr. Satterwhite addressed as part of his testimony at the rate case hearing the need to invest in the Company's transmission system (including the Hazard-Wooton transmission line) in support of Kentucky Power's economic development efforts. See Transcript of December 6, 2017 Hearing at 321-322, 324, 337-338, 370-371; Transcript of December 7, 2017 Hearing at 438.

Kentucky Power's seeks to increase its load and grow its denominator throughout its service territory, including the Hazard district, which is the primary beneficiary of the Hazard-Wooton project.

Witness: Ranie K. Wohnhas

Kentucky Power Company
KPSC Case No. 2017-00328
Commission Staff's First Re-Hearing Set of Data Requests
Dated May 9, 2018

DATA REQUEST

KPSC_RH_005 Give an itemized breakdown of each of the suggested improvements for the Hazard and Wooton Substations showing the cost of each of the suggested improvements.

RESPONSE

Please refer to KPCO_R_KPSC_RH_5 Attachment1.pdf and KPCO_R_KPSC_RH_5 Attachment2.pdf for the information requested.

Witness: Michael G. Lasslo

Hazard Breakdown					
Exhibit Order	Description	Estimate			
		Material	Construction	Commissioning	Engineering
a	Replacement of the 161kV circuit breaker pointing towards Wooton Station	$116,143	$20,000	$20,247	$95,823
b	Replacement of devices for line protection and circuit breaker control associated with the 161kV Wooton Line position	$129,934	$30,000	$20,247	$47,911
c	Replacement of the existing 161kV / 138kV Transformer#3 comprised of three single phase transformers plus one single phase spare transformer, with a three phase 161kV/138kV 350MVA or similar MVA rated transformer	$1,716,039	$498,617	$271,479	$479,114
d	Installation of a 138kV breaker with relay control on the low side of the 161kV/138kV transformer	$9,125	$50,000	$40,493	$47,911
e	Replacement of devices for transmission transformer protection associated with Transformer#3	$77,548	$30,000	$251,233	$47,911
f	Installation of a new three phase 161kV / 138kV spare transformer	$1,614,310	$368,309	$80,986	$281,646
s	Replacement of the motor operated air break switch and installation of a circuit switcher on the high side of Transformer#2	$306,481	$236,179	$12,148	$49,877
v	Replacement of devices for transmission transformer protection associated with Transformer#2	$43,056	$30,000	$8,099	$19,165
i	Installation of station service voltage transformers and associated AC service equipment on 138kV Bus#2	$590,000	$437,111	$154,000	$360,776
l	Replacement of circuit breaker disconnect switches on either side of the 138kV bus tie circuit breaker	$123,641	$117,000	$47,000	$120,259
p	Replacement of devices for transmission transformer protection associated with Transformer#1	$344,496	$95,128	$398,671	$360,776

q	Installation of coupling capacitor voltage transformers on 69kV Bus#1	$123,894	$94,753	$69,567	$360,776
g	Replacement of coupling capacitor voltage transformers on 138kV Bus#2	$37,753	$48,000	$29,453	$75,322
h	Replacement of devices for 138kV Bus#2 protection	$111,168	$70,000	$58,905	$150,643
j	Replacement of 138kV capacitor bank and switcher BB	$395,602	$550,000	$53,015	$135,579
k	Replacement of devices for capacitor bank and switcher BB protection and control	$42,405	$120,000	$53,015	$135,579
w	Replacement of 69kV capacitor bank and switcher CC	$228,426	$157,911	$58,905	$150,643
x	Replacement of devices for capacitor bank and switcher CC protection and control	$36,405	$90,000	$88,358	$225,965
y	Installation of coupling capacitor voltage transformers on 69kV Bus#2	$52,690	$39,000	$29,453	$75,322
ii	Replacement of the motor operated air break switch and installation of a circuit switcher on the high side of Transformer#4	$214,276	$650,000	$147,263	$376,609
jj	Installation of a 34.5kV breaker with relay control on the low side of 138kV / 34.5kV Transformer#4	$107,026	$167,589	$29,453	$75,322
kk	Replacement of devices for transmission transformer protection associated with Transformer#4	$61,424	$115,000	$17,672	$45,193
tt	Replacement of DC station service equipment to accommodate new Station DC loads	$89,222	$111,584	$23,562	$60,257
m	Installation of station service voltage transformers and associated AC service equipment on 138kV Bus#1	$148,271	$57,386	$45,909	$100,556
n	Replacement of existing 138kV/69kV Transformer#1	$1,200,000	$574,864	$459,891	$226,251
o	Installation of a 69kV breaker with relay control on the low side of 138/69kV Transformer#1	$153,417	$71,564	$57,251	$150,834
r	Installation of devices for 69kV Bus#1 protection	$261,850	$70,000	$56,000	$125,695
t	Replacement of existing 138kV/69kV Transformer#2	$1,200,000	$494,864	$395,891	$201,112

u	Installation of a 69kV breaker with relay control on the low side of 138/69kV Transformer#2	$153,417	$51,564	$41,251	$175,973
z	Installation of devices for 69kV Bus#2 protection	$180,000	$129,609	$103,687	$100,556
aa	Replacement of devices for line protection and circuit breaker control associated with the 69kV Bonnyman#2 Line position	$172,000	$34,547	$27,638	$100,556
bb	Replacement of the 69kV circuit breaker pointing towards Daisy Station	$105,115	$29,875	$23,900	$201,112
cc	Replacement of devices for line protection and circuit breaker control associated with the 69kV Daisy line position	$172,000	$14,547	$11,638	$75,417
dd	Replacement of the 69kV circuit breaker pointing towards Leslie Station	$105,115	$28,875	$23,100	$75,417
ee	Replacement of devices for line protection and circuit breaker control associated with the 69kV Leslie Line position	$98,000	$14,547	$11,638	$100,556
ff	Replacement of the 69kV circuit breaker pointing towards Bonnyman Station via the number one circuit	$105,115	$28,875	$23,100	$100,556
gg	Replacement of devices for line pointing and circuit breaker control associated with the 69kV Bonnyman#1 line position	$185,000	$14,547	$11,638	$100,556
hh	Installation of a 69kV circuit breaker connecting 69kV Bus#1 and Bus#2	$105,115	$28,875	$23,100	$100,556
ll	Replacement of devices for line protection and circuit breaker control associated with the 34.5kV Blackgold line position	$73,000	$32,000	$25,600	$100,556
mm	Replacement of the 34.5kV circuit breaker towards Kenmont Station	$120,000	$100,000	$80,000	$100,556
nn	Replacement of devices for line protection and circuit breaker control associated with the 34.5kV Kenmont Line Position	$95,000	$35,000	$28,000	$125,695
oo	Replacement of devices for distribution transformer protection associated with Transformer#5	$63,000	$17,000	$13,600	$50,278

pp	Replacement of the 12kV circuit breaker serving Hazard	$92,852	$62,688	$50,150	$50,278
qq	Replacement of devices for feeder protection and circuit breaker control associated with the 12kV Hazard feeder position	$32,000	$24,000	$19,200	$50,278
rr	Replacement of the 12kV circuit breaker spare	$72,000	$86,688	$69,350	$50,278
ss	Replacement of devices for feeder protection and circuit breaker control associated with the 12kV spare feeder position	$32,000	$39,000	$31,200	$50,278

Total	$11,495,331	$6,167,096	$3,595,952	$6,292,275
Total Project Value				**$27,550,655**

Wooton Breakdown					
Exhibit Order	Description	Estimate			
		Material	Construction	Commissioning	Engineering
a	Installation of station class surge arresters attached to the upper beam of the existing 161kV box bay structure on the 161kV Hazard Line position	$ 8,008	$ 6,251	$ 1,500	$ 34,954
b	Replacement of devices for line protection and circuit breaker control associated with the 161kV Hazard line position	$ 86,332	$ 60,000	$ 20,000	$ 93,361
c	Installation of two coupling capacitor voltage transformers on Phase 2 and Phase 3 of the 161kV bus;	$ 80,000	$ 40,000	$ 17,000	$ 92,361
d	Replacement of devices for 161kV bus protection; and	$ 30,000	$ 28,000	$ 7,000	$ 47,681
e	Installation of telecommunication fiber equipment	$ 11,000	$ 3,500	$ 2,000	$ 52,681

Total	$ 215,340	$ 137,751	$ 47,500	$ 321,038
Total Project Value				**$ 721,629**

VERIFICATION

The undersigned, Michael G. Lasslo, being duly sworn, deposes and says he is the Reliability Manager for Kentucky Power, that he has personal knowledge of the matters set forth in the foregoing responses and the information contained therein is true and correct to the best of his information, knowledge, and belief.

Michael G. Lasslo

Commonwealth of Kentucky)
) Case No. 2017-00328
County of Perry)

Subscribed and sworn before me, a Notary Public, by Michael G. Lasslo this 16TH day of May, 2018.

Notary Public

My Commission Expires 6-21-2018

VERIFICATION

The undersigned, Ranie K. Wohnhas, being duly sworn, deposes and says he is the Managing Director of Regulatory & Finance for Kentucky Power, that he has personal knowledge of the matters set forth in the foregoing responses and the information contained therein is true and correct to the best of his information, knowledge, and belief.

Ranie K. Wohnhas

Commonwealth of Kentucky)
) Case No. 2017-00328
County of Boyd)

Subscribed and sworn before me, a Notary Public, by Ranie K. Wohnhas this 21 day of May, 2018.

Trisha M. Young Blum
Notary Public

My Commission Expires 3-18-19

TRISHA M. YOUNG
NOTARY ID 530202
COMMISSION EXPIRES 3-18-19

VERIFICATION

The undersigned, Kamran Ali, being duly sworn, deposes and says he is the Director of Transmission Planning for American Electric Power, that he has personal knowledge of the matters set forth in the foregoing responses and the information contained therein is true and correct to the best of his information, knowledge, and belief.

Kamran Ali

State of Ohio)
) Case No. 2017-00328
County of Franklin)

Subscribed and sworn before me, a Notary Public, by Kamran Ali this 21st day of May, 2018.

Notary Public

My Commission Expires 05-13-2020

NOTARIAL SEAL STATE OF OHIO

Andrea J Daugherty
Notary Public, State of Ohio
My Commission Expires 05-13-2020