

**COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION**

IN THE MATTER OF: ELECTRONIC APPLICATION OF :
LOUISVILLE GAS & ELECTRIC COMPANY FOR AN : **Case No. 2016-00371**
ADJUSTMENT OF ITS ELECTRIC AND GAS RATES AND FOR :
CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY :
:

**FIRST SET OF DATA REQUESTS OF
KENTUCKY INDUSTRIAL UTILITY CUSTOMERS, INC.
TO LOUISVILLE GAS & ELECTRIC COMPANY**

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CUSTOMERS, INC.**

Dated: January 11, 2017

DEFINITIONS

1. “Document” means the original and all copies (regardless of origin and whether or not including additional writing thereon or attached thereto) of memoranda, reports, books, manuals, instructions, directives, records, forms, notes, letters, notices, confirmations, telegrams, pamphlets, notations of any sort concerning conversations, telephone calls, meetings or other communications, bulletins, transcripts, diaries, analyses, summaries, correspondence investigations, questionnaires, surveys, worksheets, and all drafts, preliminary versions, alterations, modifications, revisions, changes, amendments and written comments concerning the foregoing, in whatever form, stored or contained in or on whatever medium, including computerized memory or magnetic media.
2. “Study” means any written, recorded, transcribed, taped, filmed, or graphic matter, however produced or reproduced, either formally or informally, a particular issue or situation, in whatever detail, whether or not the consideration of the issue or situation is in a preliminary stage, and whether or not the consideration was discontinued prior to completion.
3. “Person” means any natural person, corporation, professional corporation, partnership, association, joint venture, proprietorship, firm, or the other business enterprise or legal entity.
4. A request to identify a natural person means to state his or her full name and residence address, his or her present last known position and business affiliation at the time in question.
5. A request to identify a document means to state the date or dates, author or originator, subject matter, all addressees and recipients, type of document (e.g., letter, memorandum, telegram, chart, etc.), number of code number thereof or other means of identifying it, and its present location and custodian. If any such document was, but is no longer in the Company’s possession or subject to its control, state what disposition was made of it.
6. A request to identify a person other than a natural person means to state its full name, the address of its principal office, and the type of entity.
7. “And” and “or” should be considered to be both conjunctive and disjunctive, unless specifically stated otherwise.
8. “Each” and “any” should be considered to be both singular and plural, unless specifically stated otherwise.
9. Words in the past tense should be considered to include the present, and words in the present tense include the past, unless specifically stated otherwise.
10. “You” or “your” means the person whose filed testimony is the subject of these interrogatories and, to the extent relevant and necessary to provide full and complete answers to any request, “you” or “your” may be deemed to include any person with information relevant to any interrogatory who is or was employed by or otherwise associated with the witness or who assisted, in any way, in the preparation of the witness’ testimony.
11. “Company” or “LG&E” means Louisville Gas & Electric Company and/or any of their officers, directors, employees or agents who may have knowledge of the particular matter addressed, and affiliates including PPL Corporation.

INSTRUCTIONS

1. If any matter is evidenced by, referenced to, reflected by, represented by, or recorded in any document, please identify and produce for discovery and inspection each such document.
2. These interrogatories are continuing in nature, and information which the responding party later becomes aware of, or has access to, and which is responsive to any request is to be made available to Kentucky Industrial Utility Customers. Any studies, documents, or other subject matter not yet completed that will be relied upon during the course of this case should be so identified and provided as soon as they are completed. The Respondent is obliged to change, supplement and correct all answers to interrogatories to conform to available information, including such information as it first becomes available to the Respondent after the answers hereto are served.
3. Unless otherwise expressly provided, each interrogatory should be construed independently and not with reference to any other interrogatory herein for purpose of limitation.
4. The answers provided should first restate the question asked and also identify the person(s) supplying the information.
5. Please answer each designated part of each information request separately. If you do not have complete information with respect to any interrogatory, so state and give as much information as you do have with respect to the matter inquired about, and identify each person whom you believe may have additional information with respect thereto.
6. In the case of multiple witnesses, each interrogatory should be considered to apply to each witness who will testify to the information requested. Where copies of testimony, transcripts or depositions are requested, each witness should respond individually to the information request.
7. The interrogatories are to be answered under oath by the witness(es) responsible for the answer.
8. Responses to requests for revenue, expense and rate base data should provide data on the basis of Total Company as well as Intrastate data, unless otherwise requested.

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TO LOUISVILLE GAS & ELECTRIC COMPANY**

- Q.1-1 Please provide the schedules contained on pages VI-4 through VI-13 of Exhibit JJS-LGE-1 (Depreciation Study attached to Mr. Spanos' Direct Testimony) as well as all workpapers in support of those schedules in electronic format with all formulas intact.
- Q.1-2 Refer to pages 10-11 of Mr. Spanos' Direct Testimony wherein he describes the "dismantlement component" added to the overall net salvage for each production facility. Refer also to pages VIII-2 and VIII-3 of Exhibit JJS-LGE-1 (Depreciation Study attached to Mr. Spanos' Direct Testimony).
- a. Please describe and provide copies of all source documentation relied upon to determine that "the dismantlement or decommissioning costs for steam production facilities is best calculated at \$40/KW of the assets subject to final retirement. The percentage for dismantlement of hydro and other production facilities is \$10/KW of the assets surviving at final retirement with the exception of the combined facility which is \$20/KW."
 - b. Please provide for each production facility the KWs utilized to calculate the "dismantlement component," the calculation of the "dismantlement component," and describe how that calculation was incorporated into the calculation of the net salvage component contained on pages VIII-2 and VIII-3 of Exhibit JJS-LGE-1. Provide all calculations if not provided in response to other requests for exhibits and workpapers in electronic format with all formulas intact.
 - c. At page 11 starting at line 9, Mr. Spanos states, "The current practice for LG&E includes a low level of terminal net salvage combined with the interim net salvage percentage. In this study, the methodology continues to advance to a more precise practice and is utilized by most utilities. The weighting of the interim and final net salvage by location establishes a more precise recovery pattern for each location." Please describe how the calculation of the overall net salvage percentage reflected in the approved depreciation rates differs from the calculation one in the new depreciation study other than the use of a lower level of terminal net salvage as part of current depreciation rates. Provide the calculations of the overall net salvage showing the interim and terminal net salvage components reflected in the approved depreciation rates and those proposed in this proceeding.
- Q.1-3 Please provide the schedules contained on pages VIII-2 and VIII-3 of Exhibit JJS- LGE-1 (Depreciation Study attached to Mr. Spanos' Direct Testimony) as well as all workpapers in support of those schedules in electronic format with all formulas intact.
- Q.1-4 Refer to page 15, lines 5-10, of Mr. Spanos' Direct Testimony wherein he describes the appropriate service life for the newer technology meters recorded by the Company in Account 370.20, Meters –

AMS. Mr. Spanos states, “The most consistent average life within the industry for new technology electric meters is 15 years, with a maximum life potential of 25 years”, to justify his use of the 15-S2.5 survivor curve. Please provide copies of all studies, analyses, or reports relied upon in support of this statement.

- Q.1-5 Refer to pages III-7 and III-8 of Exhibit JJS-LGE-1 (Depreciation Study attached to Mr. Spanos’ Direct Testimony) and the discussion of life spans for combustion turbines. The study states that “Life spans of 30 to 48 years were estimated for the majority of combustion turbines. These life span estimates are typical for combustion turbines which are used primarily as peaking units.”
- a. Please describe and provide copies of all source documentation relied upon for this determination and the determination that the newer CT units should have a life span at the low end of the cited range, or 30 years.
 - b. Please explain the differences in the combustion turbine generating units considered to explain why the proposed life span for the newer CT units is 30 years while the proposed life span for the units installed in 1970, such as Paddy’s Run Generator Units 11 and 12, is 48 years.
- Q.1-6 Refer to the present and proposed depreciation rates shown for steam and other production plant on the tabs LGE Depr Rates and LGE Proposed Depr Rates on the Excel spreadsheet titled Att_LGE_PSC_1-54_Sch_B. Provide the calculation of the net salvage percentage. At a minimum, show the terminal net salvage costs, the calculation of the terminal net salvage percentages, interim net salvage percentages, and the weighting of the interim and terminal net salvage percentages.
- Q.1-7 Please provide a copy of all notes drafted by Mr. Spanos and/or his colleagues and all other workpapers and source documents relied on but not previously supplied in response to the Commission’s MFR or Staff First Set.
- Q.1-8 Please provide a copy of all notes drafted by Mr. Spanos and/or his colleagues and all other workpapers and source documents relied on but not previously supplied in response to the Commission’s MFR or Staff First Set.
- Q.1-9 Please provide the Companies’ estimated remaining service life for the SAP CCS as of December 31, 2015. Is it the Companies’ plan to retire the CCS in mid-2019? If not, then what is the expected retirement date of the CCS? Provide a copy of all support for your response, including a copy of all documents that address the timeline and upgrade schedule for the CCS and its ultimate retirement and replacement. If none, then please so state.
- Q.1-10 Please provide the probable retirement dates used for each of the Company’s generating units and the source documents relied on for this purpose. Identify the Company witness, other than Mr. Spanos, who provided and can testify as to the probable retirement dates.
- Q.1-11 Refer to page 16 of 219 of 807 KAR:001 Section 16(7)(c), which shows the proposed demolition schedules for the Company’s retired generating plants.
- a. Please describe the present status of each of the retired plants, including the extent of facility decommissioning, dismantlement, and site remediation to date.
 - b. Please describe the full extent of the planned dismantlement and site remediation for each of the retired plants.
 - c. Please identify each statute, regulation, and/or rule that requires the demolition of each of the retired plants and explain in layman’s terms why it requires dismantlement and site remediation between now and 2022 as opposed to maintain the present status for the indefinite future or until there are definitive site development plans.

- d. Provide the year of retirement for each of the retired plants.
- e. Please provide a copy of the Company's business case and/or all other economic and/or other studies that support the Company's decision to proceed with demolition.
- f. Please provide the Company's cost estimates to demolish each of the retired plants as well as all underlying studies and documentation.
- g. For each retired plant, indicate whether the Company will proceed with demolition if the cost is not included in the revenue requirement.
- h. Please provide the Company's demolition cost estimate for each of the retired plants, including all supporting documentation.

Q.1-12 Please describe the Company's accounting for the demolition costs at Paddy's Run and other retired plants, including the FERC balance sheet and/or expense accounts used to record the costs as incurred, and the expense accounts used to record the depreciation or amortization of the costs, if any. If the Company proposes to depreciate or amortize the costs, then provide the depreciation or amortization period and the rationale for the proposed period.

Q.1-13 Please provide a quantification of the revenue requirement for the demolition of the retired plants in the test year, including all rate base/capitalization components and all operating expenses. The quantification should include all reductions in rate base/capitalization and operating expenses from savings, if any.

Q.1-14 Refer to page 17, lines 1-16, of Mr. Malloy's Direct Testimony wherein he describes the deployment-related capital and O&M costs for implementation of the AMS meter deployment as well as the projected savings. The Kentucky jurisdictional O&M expenses for LG&E Electric were estimated on line 7 to be \$13.0 million.

- a. Please provide the estimated deployment-related O&M expense by FERC account number included in the (a) base year, (b) test year, and (c) 12 months immediately succeeding the test year.
- b. Please provide the estimated O&M expense savings by FERC account number, such as meter reading expense, that serve to offset the deployment-related O&M expenses included in the (a) base year, (b) test year, and (c) 12 months immediately succeeding the test year.

Q.1-15 Refer to page 18, lines 3-16 of Mr. Malloy's Direct Testimony wherein he describes the DNV-KEMA report. Please provide a copy of this report and all cost/benefit analyses, including all quantifications and electronic spreadsheets with formulas intact.

Q.1-16 Refer to page 23, lines 8-14 of Mr. Malloy's Direct Testimony wherein he states:

The other large driver of savings results from customers using less energy and using it more efficiently as they learn more about their own usage from the web portal that will be available to them as part of the AMS deployment. The Companies and other utilities have observed that customers who actively access such information tend to decrease their usage slightly. Aggregating those savings through 2039 produces net savings of over \$166 million (nominal) and over \$66 million NPV, which are savings customers will receive directly by reducing their bills through reduced usage.

- a. Please confirm that a reduction in customer revenues is not a reduction in the Companies' costs and that the \$166 million is not a savings to the Companies. If the Company cannot confirm this, then please explain why not.

- b. Please confirm that the reduction in customer revenues does not result in a reduction in the Companies' revenue requirements; it simply means that the Companies' costs must be recovered over fewer billing units, all else equal. If the Company cannot confirm this, then please explain why not.
- c. Please provide a copy of all internal correspondence that addresses whether a reduction in revenues is a valid benefit that should be included in the Companies' cost/benefit analyses.
- d. Please identify each person, their position, and their role in the decision to include a reduction in revenues as a savings in the Companies' cost/benefit analyses.
- e. Please confirm that the Companies recover the revenues lost due to energy efficiency and demand response initiatives through increased charges per billing unit, all else equal. If the Company cannot confirm this, then please explain why not.

Q.1-17 Refer to Exhibit JPM-1 at Section 7.

- a. Refer to page 35 and the references to the 2008 EPRI study. Please provide a copy of this study and all other documents reviewed by the Companies to determine the avoidable non-technical line losses.
- b. Please provide the annual actual distribution line losses for the most recent ten years.
- c. Please provide a copy of all empirical studies and/or analyses performed by or on behalf of the Companies or other PPL affiliates that attempts to quantify actual non-technical line losses, if any. If none, then please explain why the Companies or other PPL affiliates have not performed such studies and/or analyses.
- d. Please provide all studies performed by PPL affiliates that address their actual experience in reduction of non-technical line losses or actual line losses after implementation of AMS.
- e. Please confirm that the Companies assume that the AMS meters will have service lives of 20 years and that, once installed, none of the meters will be retired or replaced.
- f. Please confirm that the Companies' cost/benefit study is limited to 20 years and does not address replacement of the entirety of the AMS meters within the next 5 years.
- g. Please indicate whether the Companies considered a longer cost/benefit study period but decided to truncate the study period in order to avoid including the cost to replace most or all of the AMS meters within the 25 year period.
- h. Please provide the average service life for the AMS meters. Provide a copy of all support relied on for this determination.
- i. Please confirm that the meters in account 370.20 Meters – AMS at December 31, 2015 were placed in service in 2015.
- j. Please confirm that Mr. Malloy agrees with the claims by Mr. Spanos in his depreciation study filed in this proceeding that "These meters are expected to have a shorter average life and maximum life than the standard meters they are replacing. The most consistent average life within the industry for new technology electric meters is 15 years, with a maximum life potential of 25 years." On this basis, Mr. Spanos used 15 years for the service life in his depreciation study. If Mr. Malloy does not agree with Mr. Spanos with respect to the 15 year service life of these meters, then please describe the specific disagreement(s) and the reasons why Mr. Malloy disagrees with Mr. Spanos.
- k. Please indicate if Mr. Malloy and Mr. Spanos discussed the assumptions and inconsistencies regarding AMS meter service lives reflected in the depreciation study and/or the AMS business case economic analyses.

Q.1-18 Please provide a quantification of the electric revenue requirement included for the AMS initiative in the test year, including all rate base/capitalization components and all operating expenses. The quantification should include all reductions in rate base/capitalization and operating expenses from savings due to the proposed transition to AMS. Provide all assumptions, data, and calculations.

- Q.1-19 Please provide the incentive compensation expense for (a) 2015, (b) 2016, (c) the base year, and (d) the test year by incentive compensation plan and by goal or target for each plan. This includes incentive compensation expense incurred directly by the Company and the expense assigned and allocated to the Company from the Service Company.
- Q.1-20 Please provide a copy of each incentive compensation plan.
- Q.1-21 Please provide a schedule showing the actual amount of property taxes paid by the Company during 2016 to each taxing authority and in total.
- Q.1-22 For each taxing authority to which aggregate property tax payments exceeding \$10,000 were made in 2016, please indicate the method of assessing asset value and whether the asset base includes or excludes CWIP in the determination of the assessed value used to determine the amount of taxes to be paid.
- Q.1-23 For each taxing authority to which aggregate property tax payments exceeding \$10,000 were made in 2016, please indicate the time of the year when value assessments were made and when payments were due. If there are any known changes related to base year and test year assessments and changes, please describe.
- Q.1-24 For each taxing authority to which aggregate property tax payments exceeding \$10,000 were made in 2016, please provide a copy of one property tax return or other information return submitted to each tax assessor and the associated resulting invoice related to taxes paid in 2016.
- Q.1-25 For each taxing authority to which aggregate property tax payments exceeding \$10,000 were made in 2016, please indicate whether there is a period of temporary abatement of taxes during the construction phase of assets to be placed in service. If so, please describe in detail.
- Q.1-26 Please provide a schedule showing how property taxes were computed for the base year and include copies of all workpapers used to determine the amount in electronic format with all formulas intact.
- Q.1-27 Please provide a schedule showing how property taxes were computed for the test year and include copies of all workpapers used to determine the amount in electronic format with all formulas intact.
- Q.1-28 Please provide a schedule of the amortization expense associated with each regulatory asset for (a) each year 2012 through 2016, (b) the base year and (c) the test year. Provide the balance of each regulatory asset at the beginning and end of each of those years, the amortization period that was used in each of those years, and the FERC accounts utilized to record the amortization expense. In addition, please source the amortization period to the Case No. in which the Commission approved the recovery and the amortization period, if any.
- Q.1-29 Please provide the Company's 2015, 2016, and 2017 pension and OPEB actuarial reports as well as the actuarial cost projections for the base year and the test year in a comparable format. Please identify all changes in assumptions, including mortality tables used in these actuarial reports compared to the actuarial reports relied on in the prior rate case.
- Q.1-30 Please provide the Company's 2017, 2018, and 2019 pension and OPEB actuarial cost projections.
- Q.1-31 Refer to page 20, lines 18-21, of Mr. Garrett's Direct Testimony wherein he describes an annual increase of \$1.1 million in transmission maintenance of overhead lines resulting primarily from a move to a five-year cycle approach from a just-in time approach.
- a. Please provide copies of all studies and/or analyses relied upon to justify the change in methodology and the amount of the annual increase.

- b. Please quantify the expected annual benefits resulting in reduced outage maintenance expense as the result of moving to the cycle approach. If none, then please explain why.
- c. Please confirm that the change to a five-year cycle approach from a just-in time approach should be expense neutral or result in a savings due to more efficient trimming aside from any savings in outage maintenance expense. If this cannot be confirmed, then please provide a detailed explanation why this is not correct.

Q.1-32 Refer to page 15 of Mr. Malloy's Direct Testimony wherein he describes the SAP upgrade in process for the Customer Care System. Please provide a copy of the Company's business case and all cost/benefit analyses performed in conjunction with the decision to implement the upgrade.

Q.1-33 Please provide the increase or savings that the Company expects to achieve in IT O&M expense and customer care expense as the result of the upgrade. Provide the expenses before and after the upgrade for the test year. Provide all assumptions, data, and calculations, including all electronic spreadsheets with formulas intact.

Q.1-34 Please provide the expected useful life of the CCS and the SAP upgrade, if different than for the CCS.

Q.1-35 Refer to page 20, lines 13-15, of Mr. Garrett's Direct Testimony wherein he describes an annual increase of \$10.7 million in steam and other generation maintenance expense due primarily to an increase in generation plant maintenance and outage expenses. Please provide a schedule showing the total company 2012, 2013, 2014, 2015, 2016, base year and test year maintenance expenses recorded or budgeted if not yet incurred for generation plant maintenance and outage expenses by plant/unit and by FERC O&M expense account.

Q.1-36 Please describe how the Company removed the effects of purchase accounting from the capitalization, all rate base components, and all related expenses, such as depreciation expense and property tax expense, reflected in the filing. Provide a schedule in electronic spreadsheet format with all formulas intact showing all adjustments and providing an explanation of each such adjustment.

Q.1-37 Please provide a schedule showing all direct assignments and allocations of costs from LKS to the Company by FERC O&M, A&G, and each other account for 2012, 2013, 2014, 2015, 2016, the base year, and the test year. Provide an explanation for each increase from year to year of at least \$1 million or 5%, whichever is less.

Q.1-38 Please provide all work papers and supporting documentation used by Mr. McKenzie in the preparation of his Direct Testimony and Exhibits. Please provide all spreadsheets with cell formulas intact. Please include all exhibits in native spreadsheets with cell formulas intact.

Q.1-39 Please provide all credit rating and bond rating agency reports (i.e., Standard and Poor's, Moody's, Fitch) for LG&E and KU for the last two years. Please include the most recent reports for 2017, if any.

Q.1-40 Please provide copies of all articles, regulatory commission orders, and reports cited by Mr. McKenzie in his Direct Testimony.

Q.1-41 Please provide all credit rating and bond rating agency reports (i.e., Standard and Poor's, Moody's, Fitch) for PPL Corporation for the last two years. Please include the most recent reports for 2017, if any.

Q.1-42 Please provide all work papers and supporting documentation used by Mr. Arbough in the preparation of his Direct Testimony and Exhibits. Please provide all spreadsheets with cell formulas intact. Please include all exhibits in native spreadsheets with cell formulas intact.

- Q.1-43 Please provide all supporting calculations and documentation that support the numbers for LGE cited by Mr. Arbough on page 9, lines 3 through 16 of his Direct Testimony. Provide all spreadsheets with cell formulas intact.
- Q.1-44 Please provide all supporting calculations and documentation that support the numbers for LGE cited by Mr. Arbough on page 10, lines 16 through 18 of his Direct Testimony. Provide all spreadsheets with cell formulas intact.
- Q.1-45 Please provide Schedules J-1, J-1.1, J-1.2, J-2, J-3, and B-1.1 in native spreadsheet format with cell formulas intact.
- Q.1-46 Please provide the remaining service lives for each of the Company's operating coal-fired units relied on in Case No. 2016-00027 to justify or that otherwise were assumed for the proposed environmental projects. Provide all documentation relied on for your response.
- Q.1-47 Please provide a history of transmission capital expenditures and closings to plant in service for each calendar year 2006 through 2015, the base year, and the test year separated into routine projects and specific projects (by project).
- Q.1-48 Referring to the proposed Curtailable Service Rider:
- a. Please provide in native format all workpapers, studies, analyses, and documents (all Excel worksheets with working formulas and intact links) supporting and/or underlying the development of the proposed rider.
 - b. Provide all studies and/or analyses that LG&E conducted concerning expected customer acceptance of and willingness to receive service under the proposed rider.
 - c. Identify and provide all documents provided to and correspondence with existing interruptible customers related to the development, implementation, and operation of the proposed CSR rider.
 - d. Provide all documents relating to any customer comments and/or feedback that LG&E received regarding the proposed reductions in rate credits under the CSR rider prior to LG&E's deciding to include the reduced credits in the proposed CSR rider.
 - e. Identify and provide all alternative rate credits for the CSR rider that LG&E considered but rejected, and describe in detail the reasons for rejecting the considered alternative(s).
- Q.1-49 Identify and provide all workpapers, studies, analyses, and documents related to any analyses conducted by or on behalf of LG&E concerning the potential customer-specific and service-area economic impacts of reducing the existing CSR credits.
- Q.1-50 For each existing CSR customer (identified only by reference number), please provide the estimated annual dollar impact of LG&E's proposed reductions in the CSR credit. Provide all workpapers supporting the estimated annual dollar impacts.
- Q.1-51 Referring to existing Rider CSR:
- a. For each customer (identified only by reference number) served under the rider, identify the total MW of curtailable/interruptible load under contract. Please indicate if the requested information is the same as information provided in the direct testimony of witness David S. Sinclair at 24: Table 6. This instruction applies to each subpart of this request.
 - b. State the number of months in which each customer in subpart (a) above has been continuously served under the existing rider or its predecessor.

- c. For each customer identified in the subpart (a) above, provide the customer's firm contract demand if applicable under Option A.
- d. For each customer identified in the subpart (a) above, provide the customer's Designated Curtailable Load if applicable under Option B.

Q.1-52 Referring to existing Rider CSR and its predecessors:

- a. For each customer (identified only by reference number) served under the rider, identify the date, time, and duration of each curtailment called by LG&E in the past 60 months?
- b. For each curtailment referenced in the response to subpart (a) above, specify whether the curtailment was a system reliability event or a buy-through event, identify the MW of load curtailment requested, and identify the MW of load that failed to comply with the curtailment request.
- c. For each buy-through curtailment identified in the response to subpart (b) above, specify whether the customer bought through the curtailment, the amount of buy-through energy purchased, the price paid for such buy-through energy, and the source (system supply or market) of the buy-through price.

Q.1-53 Please provide a timeline for the last 10 years showing by year each curtailable/interruptible rate or rider offered by LG&E, the number of customers served under each rate/rider, and the total MW of interruptible or curtailable load served under each curtailable/interruptible rate/rider.

Q.1-54 Please identify all reports, studies, and/or analyses conducted by on behalf of LG&E or its parent company in the past 5 years related in total or in part to retail interruptible or curtailable electric service in Kentucky.

Q.1-55 Please explain in detail how LG&E (acting alone or in conjunction with affiliates) treats interruptible/curtailable load in:

- a. Developing its long-run load forecast.
- b. Determining its long-run need for future supply-side resources.
- c. Determining its need for operating reserve capacity.
- d. Providing ancillary services.
- e. Determining whether such load qualifies as spinning reserve.

Q.1-56 Given existing laws and regulations in Kentucky, please identify and describe in detail each non-LG&E market option and/or mechanism under which an existing CSR customer could have its curtailable load served.

Q.1-57 Given existing laws and regulations in Kentucky, please identify and describe in detail each non-LG&E market option and/or mechanism through which an existing CSR customer could sell its interruptible load as a demand response resource.

Q.1-58 Please explain in detail how LG&E treats curtailment buy-through revenues in setting base rates and/or modifying its Fuel Adjustment Clause.

Q.1-59 Please identify and explain in detail how LG&E treats test-year curtailment buy-through revenues in the electric cost-of-service study filed in this case. This request refers to the methodology that LG&E would use even if it received no test-year CSR buy-through revenue.

Q.1-60 Please identify and explain in detail how LG&E treats test-year curtailment credits paid to CSR customers in the electric cost-of-service study filed in this case. This request refers to the methodology used by LG&E, and not to any specific amount of test-year CSR credits.

- Q.1-61 Please identify and explain in detail all situations other than a system reliability event in which LG&E would need or want to physically curtail load under the CSR rider.
- Q.1-62 Referring to the direct testimony of David S. Sinclair at 24:11 – 25:3:
- a. Confirm that the *key condition* discussed at 24:16-18 refers only to physical curtailments under Rider CSR.
 - b. Since Rider CSR (or its predecessors) was first approved by the Commission, please identify each instance in which LG&E would have issued a physical curtailment request but was prevented from doing so by the *key condition* restriction discussed at 24:16-18.
- Q.1-63 Referring to the direct testimony of David S. Sinclair at 25:4-9:
- a. Please provide the Annual Generation Forecast.
 - b. For each of the eight forecast CSR curtailment events, identify and explain in detail the underlying load and system conditions driving LG&E's expected need for physical curtailment.
- Q.1-64 Please identify each existing DSM and/or energy efficiency program that LG&E proposes to either close to new customers or limit incremental program participation by existing participants during the Forecasted Test Period.
- Q.1-65 Referring to the direct testimony of David S. Sinclair at 26:5 – 27:3:
- a. Please define *primary* as used in the phrase *primary combustion turbines*.
 - b. Please define (and if possible, quantify) *meaningful* as used in the phrase *meaningful annual load growth*.
 - c. For each of the past 10 years, please provide LG&E's annual load growth.
 - d. Please provide LG&E's forecast of annual load growth for each of the next 10 years.
- Q.1-66 Please provide LG&E's current estimated cost in current dollars of an installed combustion turbine. Provide all workpapers, studies, analyses, and documents supporting and/or underlying this estimate.
- Q.1-67 Please provide a levelized fixed charge rate for a new combustion turbine using LG&E's cost of capital and tax rates. Provide all workpapers, studies, analyses, and documents supporting and/or underlying this response.
- Q.1-68 Please provide the estimated fixed O&M for a new combustion turbine in current dollars. Provide all workpapers, studies, analyses, and documents supporting and/or underlying this response.
- Q.1-69 Please provide LG&E's required reserve margin for capacity planning. Provide all workpapers, studies, analyses, and documents supporting and/or underlying this response.
- Q.1-70 Please provide a copy of LG&E's most recent integrated resource plan. .
- Q.1-71 Please provide all workpapers, studies, analyses, and documents underlying and supporting LG&E's proposed change in the natural gas price index used to determine the automatic buy-through price in Rider CSR.
- Q.1-72 Referring to the direct testimony of Robert M. Conroy at 16:20-23:

- a. Explain in detail the conditions under which LG&E would no longer “continue to allow the current customers under the CSR service schedule to remain CSR customers for an indefinite period of time....”
 - b. Explain in detail why “the Company is not proposing to remove CSR from its tariff at this time.”
- Q.1-73 Referring to the direct testimony of Robert M. Conroy at 17:1-3, explain in detail LG&E’s rationale for maintaining the \$16 per kVA non-compliance charge in the proposed Rider CSR while reducing the CSR credits by more than 40 percent.
- Q.1-74 Provide in native format all workpapers, studies, analyses, and documents supporting and/or underlying the \$16 per kW Non-Compliance Charge in the proposed CSR rider.
- Q.1-75 Referring to the direct testimony of William Steven Seelye at Exhibit WSS-3:
- a. Please provide the exhibit in Excel format with working formulas and all links intact.
 - b. Please provide all workpapers, studies, analyses, and documents supporting and/or underlying the exhibit.
 - c. Please identify and provide the specific information and data source for each row item in the column labeled *Description* in the exhibit.
- Q.1-76 Please identify the carrying cost(s) used by LG&E in its most recent integrated resource plan to evaluate the cost of alternative resource options, specify the components of such carrying cost, provide the formula used to derive the carrying cost, and explain its derivation in detail.
- Q.1-77 Please identify the carrying cost(s) used by LG&E in its current analyses of generation resource options, specify the components of such carrying cost, provide the formula used to derive the carrying cost, and explain its derivation in detail.
- Q.1-78 Please provide excel versions, with formulas intact, of each of the exhibits presented by LGE witnesses Robert Conroy and Steven Seelye.
- Q.1-79 Please provide all supporting workpapers that support Mr. Conroy’s testimony and exhibits and Mr. Seelye’s testimony and exhibits. If such workpapers are available in excel format, please provide with formulas intact.
- Q.1-80 To the extent not provided in response to the previous question, please provide the following information for each rate class/rate schedule included as a separate class in the class cost of service study for the test year 12 months ending June 2018:
- a. monthly system peak load (LGE and KU separately stated and combined).
 - b. the load of each rate class at the time of the monthly LGE/KU system peak, showing the following:
 - 1. load at meter
 - 2. losses
 - 3. load at generation
 - c. Monthly mWh energy at the generation voltage level for the rate class/rate schedule.
 - d. Energy and demand loss factors for each voltage level, by rate class/rate schedule, at which customers on the rate class/rate schedule take service.

- e. Monthly mWh energy sales at the meter, separately stated for each voltage at which customers in each rate class/rate schedule take service, by rate class/rate schedule (for example, the metered mWh for Rate PS secondary and Rate PS primary by month).

Q.1-81 With regard to LGE – WSS-17 (LOLP), please provide all supporting workpapers, in excel format with all formulas intact, used to develop this exhibit. This would include, but not be limited to:

- a. hourly system load
- b. hourly rate class load at:
 - 1. meter
 - 2. generation voltage
 - 3. loss factor used to convert metered load into load at generation
- c. hourly LOLP for the combined KU-LGE system

Q.1-82 Please provide the output of the analysis used to develop hourly LOLP. Provide in excel format, with formulas intact.

Q.1-83 Provide, for the past three years (2016, 2015 and 2014) the following actual information:

- a. monthly system peak load (LGE and KU separately stated and combined system).
- b. date and hour of the LGE + KU monthly peaks
- c. date and hour of the separate LGE and KU monthly peaks

Q.1-84 Please provide a description of how AMS costs allocated in the class cost of service studies presented by Mr. Seelye (WSS-23, WSS-24)?

Q.1-85 Please provide any information available to Mr. Seelye, the Prime Group or KU regarding the following:

- a. Any regulatory jurisdiction that has adopted the LOLP cost of service method used by Mr. Seelye in this case.
- b. For each such jurisdiction, please provide a copy of a Commission Order addressing this issue.
- c. Identification of any electric utility that supported the LOLP method in testimony before a state regulatory commission. Please identify the name of the utility, the case number and a copy of the testimony.
- d. Identification of any electric utility in KY that has presented testimony before the KPSC in support of the LOLP cost of service method. For each such utility, please provide the name of the utility, the case number and a copy of the testimony.

Q.1-86 Please provide any testimony, papers or presentations prepared by Mr. Seelye or any other employee of the Prime Group in the past ten years which addresses the LOLP cost of service methodology. This would include all testimony, papers or presentations supporting the LOLP method and testimony opposing the LOLP method.

Q.1-87 With regard to the decision by KU to present an LOLP cost of service study in this case, please provide all memoranda, emails or other writings that address this decision prepared in the past two years.

Q.1-88 With regard to Mr. Seelye's testimony at 2:6, please provide a complete description of the methodologies that LGE and KU utilize to plan generation resources. Please provide the same information for transmission resources.

- Q.1-89 Please provide the most recent Integrated Resource Plan (“IRP) of LGE and KU.
- Q.1-90 With regard to Mr. Seelye’s testimony at 2:6, please explain how an increase in system load (KU +LGE) during an off-peak period in April or October contributes to the need for generation resources.
- Q.1-91 With regard to Mr. Seelye’s testimony beginning at 7:1, please provide a complete set of workpapers, including excel spreadsheets with all formulas intact that support the allocation of the revenue increase shown in Table 1.
- Q.1-92 With regard to Schedule M-2.3-E, pages 8-10, please provide a proof of revenue/rate design for Rates RTS, TOD-Primary and TOD-Secondary, that reflect the current 75% demand ratchet.
- Q.1-93 With regard to Mr. Seelye’s testimony at 45:9 to 50:7, please provide a calculation of the effective percentage of fixed generation related demand costs that a standby customer that used backup generation for 1 hour during a peak period would pay on Rate RTS and on Rate TOD-P based on the Company’s proposal. For example, if the intermediate and peak demand charges represented 100% of generation demand costs and there is a 50% demand ratchet, the customer would pay for 50% of monthly generation demand costs for 11 months and 100% for 1 month.
- Q.1-94 With regard to Schedule M-2.3-E pages 3-24, please provide the support for the Base Demand (100%) billing determinants for Rates TOD-Secondary, TOD-Primary and RTS. Specifically, provide the support for the values from the Pivot table (TAB “Pvt_Tbl”) in the excel workpaper “Att_LGE_PSC_1-53 ElecScheduleM_Forecasted” that is used to derive the Base Demand (100%) billing determinants.
- Q.1-95 With regard to Schedule M-2.3-E pages 3-24, please explain how the total Base Demand charge revenue requirement for Rates TOD-Secondary, TOD-Primary and RTS were each determined.



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