COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

Application Of Kentucky Power)
Company For (1) A General Adjustment Of Its)
Rates For Electric Service; (2) An Order)
Approving Its 2017 Environmental Compliance)
Plan; (3) An Order Approving Its Tariffs And)
Riders; (4) An Order Approving Accounting)
Practices To Establish Regulatory Assets And)
Liabilities; And (5) An Order Granting All Othe	r)
Required Approvals And Relief)

Case No. 2017-00179

TESTIMONY OF

RONALD L. WILLHITE

SCHOOL ENERGY MANAGER PROJECT DIRECTOR

KENTUCKY SCHOOL BOARDS ASSOCIATION

FILED: October 3, 2017

1 2		INTRODUCTION
3 4	Q.	Please state your name and business address.
5 6	A.	My name is Ronald L. Willhite and business address is 260 Democrat Drive, Frankfort, KY 40601.
7	Q.	By who are you employed?
8 9 10 11 12 13 14 15 16 17 18	Α.	I am employed by the Kentucky School Boards Association as Director of the School Energy Managers Project. The Kentucky School Boards Association (KSBA) is a nonprofit corporation of school boards from each public school district in Kentucky. The association, founded in 1936, now has over 75 years of serving school board members and school districts in such areas as governmental relations, board member and team development, risk management, facility planning, energy management, legal services, policy services, publications and community relations. It is governed by a 27-member board of directors made up of representatives elected as regional chairpersons or as directors-at-large. With nearly 900 school board members, KSBA is the largest organization of elected officials in Kentucky.
	Q.	Please describe your regulatory and public school experience.
21 22 23 24 25 26 27 28 29 30 31	Α.	In December 2001 I retired from LG&E Energy Services. Among my responsibilities during my career were the development of integrated resource plans, comprehensive analysis of energy management alternatives, tariff design and administration, sales and revenue forecasts and market research. During my tenure at the Companies I testified before this and other commissions on numerous rate and regulatory matters. In March 2010 I was employed by KSBA to develop and direct the School Energy Managers Project (SEMP). From 1989 to 1998 I served on the Scott County Board of Education, the last six years as its chairman, and since 2009 have served on their Energy Committee. I graduated from the University of Kentucky in 1969 earning a B.S. in Electrical Engineering.
32 33	Q.	Please describe Kentucky's public schools and the role of boards of education.
34 35	A.	Kentucky has some 1233 P-12 public schools serving 675,000 students that are overseen per statute by 173 local school boards pursuant to KRS 160.290:
36 37 38 39		"Each board of education shall have general control and management of the public schools in its district and may establish schools and provide for courses and other services as it deems necessary for the promotion of education and the general health and welfare of pupils, consistent with

the administrative regulations of the Kentucky Board of Education. 1 Each board shall have control and management of all school funds and 2 all public school property of its district and may use its funds and 3 property to promote public education. Each board shall exercise 4 generally all powers prescribed by law in the administration of its public 5 school system, appoint the superintendent of schools, and fix the 6 7 compensation of employees." 8 9 Q. What specific issues are you addressing? 10 I will address the following; 1) impact of the proposed increase on public schools, 2) A. 11 Company proposal to discontinue the Pilot Tariff K-12 School, 3) public school energy 12 management initiatives, 4) Company's proposed bill format, and 5) return on equity 13 disparity. 14 15 **IMPACT ON SCHOOL** 16 17 Q. How will the requested increase impact schools? 18 19 Kentucky's public schools continue to be severely impacted by today's economic A. conditions. After personnel, energy is typically the second highest cost for schools. 20 Unlike businesses that can increase sales or prices to offset cost increases, public schools 21 must either cut programs or attempt to raise taxes. Public schools cannot refuse service to 22 a student or limit their enrollment. 23 The Company is requesting an average overall increase of 12.6 percent on Adjusted Base 24 Current Revenue, but is requesting an increase for schools of over 14.8 percent. While 25 26 schools understand the Company is faced with significant challenges the revenue increase as proposed would be extremely challenging to schools and their students. I will address 27 options for the Commission to mitigate the impact on public schools. 28 29 **TARIFF K -12 SCHOOL** 30 31 Do you concur with Company Witness Vaughan that K – 12 schools would be better 32 Q. off on Rate L.G.S. than continuing to receive service on a Public School Service 33 **Tariff**? 34 35 36 A. Absolutely not. Mr. Vaughan contends that service to schools on Tariff K -12 School is improper because it is a lesser or discounted rate than Tariff L.G.S. However as is shown 37

1 2 2		by Witness Buck the Tariff K $-$ 12 School is producing a ROR some 1.57 times the Company's jurisdictional average return.			
3 4 5	Q.	In what ways do public schools differ from other customers?			
6 7	A.	Public schools differ from other customers in three primary ways:			
8		1. Public schools are required to develop energy management plans by KRS160 325 and Board Policy			
10		2 Public schools operating hours differ significantly from commercial and			
11		industrial customers.			
12		3. Public school load and usage characteristics differ significantly from			
13		commercial and industrial customers.			
14		4. Public schools provide less risk to serve than other customers served on Tariff			
15		L.G.S.			
16		5. Public schools loads are weather sensitive in contrast to many other customers			
17		served on Tariff L.G.S.			
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19 20	Q	Please explain KRS160.325 and how the statute distinguishes public schools from other customers.			
21 22 23 24 25 26 27 28 29 30 31	Α.	Local school boards of education are the only entity in Kentucky that are required by statute to development and implement energy management plans. " <i>In an effort to reduce rising energy costs that are straining school budgets</i> " the General Assembly in 2008 passed House Bill 2, which became law on July 15, 2008 as KRS 160.325. To implement the mandate of the statute <u>boards of education</u> adopted Energy Management Policies as shown below and began mandated reporting annually through the Kentucky Pollution Prevention Center ("KPPC") to the Department for Energy Development and Independence ("DEDI") and the Legislative Research Commission ("LRC") on the status of the development of energy management plans by those boards of education and the anticipated savings to be obtained from those plans. In 2014 Boards began reporting through KSBA to the LRC and DEDI.			
32		In 2010 local boards of education adopted the following energy policy:			
33		05.23 Energy Management			
34		It is the intent of the Board that the District use energy resources in a safe			
35		and efficient manner with an on-going focus on identifying and			
36		implementing cost saving measures and developing staff and student			
37		commitment to identified energy management practices.			
38		To promote this effort, the Superintendent/designee shall direct the			
39		development of an energy management plan (EMP) for Board approval and			
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oversee the implementation and maintenance of that plan, which shall 1 2 address the following components: 3 District level committee shall be appointed the 1. A bv Superintendent/designee to develop and implement the energy management 4 5 plan (EMP). 2. The District level committee shall track and monitor the EMP to 6 determine progress toward managing and reducing energy costs. 7 3. Effective with the 2011-2012 school year, the Superintendent/designee 8 shall report the EMP results for each fiscal year, including annual District 9 energy usage, costs and anticipated savings to KPPC – the Kentucky 10 Pollution Prevention Center – by October 1st annually through the Kentucky 11 Energy Efficiency Program for Schools (KEEPS). 12 A status report on implementation of the plan in Board-owned and Board-13 operated facilities shall be provided to the Board following the end of each 14 *fiscal* year 15 16 Q. Please explain how public schools operate different than commercial and industrial 17 18 customers. 19 While schools, commercial and industrial customers operate on a defined schedule, those 20 A. schedules are drastically different. Many industries operate 2^{nd,} 3rd and weekend shifts 21 while stores operate extended hours into the evening year round seven days per week. 22 23 Schools typically are fully occupied from 7:30 am until 2:30 pm weekdays only nine to ten months of the year with numerous shut down periods for breaks throughout the year. 24 25 Schools continue open beyond instructional periods for extra-curricular activities, but by 26 this time automation systems and set back procedures have begun adjusting temperatures for unoccupied space. In a nutshell school load build up typically begins around 7 am, 27 28 peaks by lunch time and declines at a significant pace until and after the instructional day ends in early-afternoon. RLW Exhibit 1 shows the 24-hour load profiles for schools 29 30 served on Pilot Tariff K - 12 School and Tariff L.G.S. for the Company's August and January system peak days. Below is the typical elementary school relationship of 31

occupied to unoccupied operation hours.

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3 Q. What is the mix of customers served on Tariff L.G.S?

- 4 A. Using SIC data provided by the Company I prepared the below table which shows the
- 5 number of customers by business purpose.

Agriculture	1	0.2%
Mining	66	10.1%
Contruction	2	0.3%
Manufacturing	56	8.5%
Transportation	24	3.7%
Utilities	39	6.0%
Wholesale Trade	15	2.3%
Retail Trade	180	27.5%
Finance and Insurance	45	6.9%
Hotels	20	3.1%
Personal Services	3	0.5%
Business Services	4	0.6%
Auto Repair	3	0.5%
Misc Repair	4	0.6%
Motion Pictures	2	0.3%
Amusement and Recreation	5	0.8%
Health Services	58	8.9%
Colleges	30	4.6%
Libaries	2	0.3%
Vocational	15	2.3%
Social Services	7	1.1%
Membership Orgs	22	3.4%
Public Adm	52	7.9%
Total	655	100%

As shown Tariff L.G.S. is dominated by mining, manufacturing and business customers, all of which are more sensitive to economic downtown than K – 12 schools and whose operating hours are typically different than schools. As a result these customers pose more uncertainty with regard to consistency of load imposing greater risk for the Company in facility planning and financial stability.

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Q. Is use of energy by schools weather sensitive?

- 9 A. Absolutely. A school's typical energy usage is dominated by heating, air conditioning
 10 and ventilation (HVAC). Witness Vaughan acknowledges customers on Tariff L.G.S. are
 11 not materially affected by weather.
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Q. What is your recommendation for Pilot Tariff K – 12 School?

A. The Commission should approve removing the "Pilot" designation and authorize Tariff K
- 12 School. If there is any class of customers where the class ROR should be equated to
the Company's overall average it is K – 12 schools. Therefore Tariff K – 12 School
charges should be determined to produce revenue at the final approved overall ROR in
this proceeding, but in no event should the existing pilot charges be increased to increase
K – 12 school revenues by more than the final approved increase for Tariff L.G.S.

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Public School District Energy Management Initiatives

24 Q. What are schools doing to manage energy costs?

A. As described above the General Assembly via House Bill 2, which became law on July
15, 2008 as KRS 160.325, directed and encouraged public schools to focus on making
intelligent energy choices. In addition on July 15, 2010 KRS 157.455 became law stating
that the Kentucky Department of Education and all school districts undertaking the
construction of new school buildings or the major renovation of existing school buildings
are strongly encouraged to:

- a) Meet or exceed efficient school design standards in planning and designing all
 new buildings and major renovation projects;
- b) Use life-cycle cost analysis to evaluate different design proposals; and

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c) Consider the possibility that each new school building or major renovation of a building could be a net zero building, either during the construction or renovation, or at a later date as resources become available.

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Q. Please describe the School Energy Managers Project (SEMP).

7 A. In 2010, Kentucky School Boards Association ("KSBA") created and implemented the 8 School Energy Managers Project ("SEMP"), a state-wide school energy management infrastructure that assists public school districts with compliance with statutory and board 9 policy requirements that direct local boards of education to focus on rising energy costs. 10 SEMP, initially funded by a \$5 million dollar federal economic stimulus grant during 11 12 FY2011 – FY2012, helped place 35 energy managers to serve 130 school districts and support existing energy managers in 14 additional districts. By fostering intelligent 13 energy choices in new and existing buildings through implementation of energy 14 efficiency projects Kentucky school districts since July 1, 2010 have captured more than 15 \$123 million in savings/cost avoidance. Kentucky is 3rd in the nation as a percentage of 16 its K-12 schools, with over 30 percent having achieved the ENERGY STAR certification. 17 Statewide ninety-four districts have at least one ENERGY STAR school and twenty 18 districts have all their schools ENERGY STAR certified. Six Company served districts 19 have a total of seventeen certified schools. In 2014 and 2015 KSBA-SEMP was 20 recognized nationally as an ENERGY STAR Partner of the Year for Energy Efficiency 21 Program Delivery for its support and partnering with public school districts. In 2016 and 22 2017, the program received further recognition as ENERGY STAR Partner of the Year -23 Sustained Excellence Award. 24

- Following expiration of the stimulus funding, \$2.5 million in funding from Kentucky's 25 Energy and Environment Cabinet, LGE/ KU and Kentucky Power enabled SEMP to 26 continue assisting Kentucky's 173 public school districts through FY2016. An additional 27 \$2.45 million of funding from LGE and KU approved in Case No. 2015-00398 enabled 28 extending the program through FY2018 to provide support to 84 LGE/KU served districts 29 to provide matching salary funds; analytical and technical support; and funding for 30 energy efficient projects such as modern highly efficient LED lighting in classrooms, 31 32 gyms, hallways and parking lots. Funding from Kentucky's Energy and Environment Cabinet, Kentucky Power and KSBA facilitated continued service to remaining districts 33 including matching salary funds for 12 energy managers serving 17 districts in the KPC 34 service territory through FY207. 35
- KSBA-SEMP management staff assists district/partnerships in the employment,
 coaching, monitoring and evaluation of energy managers; procures supporting funding;
 provides analytical and engineering support; coordinates and provides professional
 development opportunities for energy managers; utilizes its outreach capacities to timely
 communicate success stories to board members, superintendents, governmental officials

and the general public; fosters best practice implementation; monitors and coordinates utility activities and relations; and develops and submits annually a Kentucky School Energy Management Report to the Cabinet and General Assembly.

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Q. What actions have been taken by boards of education?

7 In addition to all 173 public school boards of education having adopted an Energy A. 8 Management Policy, most districts have established an energy committee and have developed and implemented an energy management plan under the leadership and 9 assistance by their energy manager. Recognizing that students are the future home and 10 community energy managers, school energy managers working in conjunction with the 11 Kentucky National Energy Education Development Project (NEED) and the Kentucky 12 Green and Healthy School Program (KGHS) are actively involved with teachers in 13 14 curriculum modifications that are being implemented to foster energy awareness. The energy managers work closely with the Company's demand-side management staff to 15 benefit from energy audits and capture rebates from the Company's program as they 16 install energy conservation measures such as efficient lighting. 17

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Q. Please explain how Kentucky's public schools utilization of energy compares to schools across the nation.

- A. Kentucky's public schools had not been ignoring energy efficiency, but KRS160.325 and
 SEMP have successfully facilitated an acceleration and more comprehensive focus. A
 common metric is the energy utilization index or "EUI" (kBtu per square foot). The
 national average for K-12 schools is 73, while the Kentucky school district average in
 FY2016 was 52, down from 65 in FY2010, the first year of the program. Kentucky's
 ENERGY STAR schools have increased from 12 in 2008 to 398, placing Kentucky third
 in the nation as a percent of K-12 eligible buildings.
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Q. How are districts able to construct these very efficient schools?

Districts utilize the expertise of skilled architects well versed in energy efficiency A. 32 methods in the design of construction projects. In addition, the Facilities Branch of the 33 34 Kentucky Department of Education reviews and approves all construction projects. Use of modern wall and roof construction technologies, geothermal and variable refrigerant 35 flow space conditioning technologies, efficient LED lighting, day-lighting and building 36 automation control systems are primary factors contributing to highly efficient projects. 37 38 However, it takes a skilled solid energy management plan lead by a skilled energy 39 manager for facilities to daily maintain design potential.

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- 41 Q. What is the current status of the KPC School Energy Management Program?

1 2 The Commission in Case No. 2014-00178 approved a new commercial demand-side A. 3 management ("DSM") program "to help fund energy management programs for schools that are mandated by KRS 160.325 to participate in the Kentucky Energy Efficiency 4 5 Program — \$75,000 in 2014 and \$50,000 in 2015". Pursuant to the Commission's Final Order in Case No. 2012-00578 the Program was available to eight eligible school districts 6 7 located in Kentucky Power's service territory in Lawrence County and six contiguous counties. Subsequently, the Commission by Order of August 3, 2015 in Case No. 2015-8 9 00189 approved expansion of the initial Program by an amount not to exceed \$200,000 per year for two years to (1) fund up to an additional six school energy managers as part 10 11 of the expansion of the School Energy Manager Program to the Company's entire service territory; and (2) to the extent funds are available, to fund school energy efficiency 12 projects. 13

In early 2017 KSBA advised KPC that approximately \$85,000 from the expanded 15 program would be unspent if not otherwise utilized and initiated discussions as to 16 whether to use those funds during FY2017 to fund energy school efficiency projects or to 17 18 use the funds for energy managers in FY2018. It was the consensus that the unspent funds would be best used to continue support for energy managers in FY2018. Since the 19 20 unspent funds would only fund energy managers through December 2017, KPC indicated a preference to seek Commission approval for additional funding of \$95,000 to fund the 21 22 energy managers through June 30, 2018. Through subsequent requests KSBA sought clarification as how to proceed and it took particular note and inquired of KPC regarding 23 the impact of the Commission's May 4 Order in Case No. 2017-00097 on use of the 24 By this time, however, KSBA and districts could not complete 25 unspent funds. installation of energy efficiency projects by June 30, 2017. 26

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Q. Has KPC recently updated KSBA on their plans?

A. Yes. Counsel for KPC on September 12 advised KSBA counsel that the Company will be
 requesting PSC approval in their current DSM case to extend the funds into FY2018.

Q. What is the Companies' response to extending their School Energy Management Program?

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- A. KSBA is certainly appreciative of KPC seeking clarification for KSBA using the "previously" approved funding into F2018. However, we believe proving energy manager funding through FY2020 would be appropriate to sustain the momentum by schools in becoming more efficient in energy usage. Simply, KSBA's is hopeful KPC will confirm KSBA can expend the unspent funds and seek approval to provide additional funding of \$95,000 for FY2018 and for \$200,000 annually for FY2019 and

FY2020. Districts have a need for this program and there is no demonstrable reason that
 the additional funding cannot be recovered through KPC's DSM Surcharge and collected
 from all applicable customers in their service territory.

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Q. What's at risk if the Program is not timely expanded and extended?

A. Loss of momentum in capturing demand and energy savings beneficial to KPC and all ratepayers and the loss of energy managers to serve schools in implementation of the Commonwealth's energy efficiency initiatives. Many districts may not retain and/or rehire a non-teaching position such as an energy manager or will reassign employees to other tasks without that position being part of its operating budget which must be approved by May.

PROPOSED BILL FORMAT

17 Q. Please explain the Company's proposal to modify its' customer bill format.

- 19 A. Kentucky Power's current bill individually calculates and displays the following:
 - a. Rate Billing
 - b. Fuel Adjustment Clause
 - c. Demand-Side Management Adjustment Factor
 - d. Kentucky Economic Development Surcharge
 - e. Capacity Charge
 - f. Big Sandy 1 Operation Rider
 - g. Environmental Surcharge
 - h. Big Sandy Retirement Rider
 - i. Purchased Power Adjustment
 - j. Green Pricing Option
 - k. School Tax
 - 1. Franchise Fee
- m. State Sales Tax
- The Company is proposing to combine Rate Billing, Kentucky Economic Development Surcharge, Capacity Charge, Big Sandy 1 Operation Rider, Big Sandy Retirement Rider, Purchased Power Adjustment, and Green Pricing Option (if applicable) into a single "Rate Billing" line item. The Fuel Adjustment Clause, the Demand-Side Management Factor, the Environmental Surcharge, School Tax (if applicable), Franchise Fee (if applicable), and State sales Tax (if applicable)) will continue to be displayed as individual billing line items.
- The Company also proposed improvements in the layout and composition of its billingcorrespondence to:

- Enhance the presentation of the information displayed in the bill. 1 • Give the bill a clean and more easily useable appearance. 2 • Make it easier for customers to identify and understand the information 3 4 presented. 5 The Commission approved the layout and composition by Order of September 12 in this 6 proceeding. However, the requested combining of charges remain as the Order stated 7 "The substantive changes proposed relating to Kentucky Power's request to consolidate 8 9 certain line items will be decided as part of the final Order in this matter." 10 **O**. Please describe concerns you have regarding the combining of charges on the 11 revised bill format. 12 13 While I appreciate the expressed customer concerns for simpler bills, to effectively 14 A. manage energy use and cost timely access to detail billing data is mandatory to identify 15 issues, measure performance and audit bills. The Company currently combines the 16 17 Service, Demand, Excess Reactive and Energy Charges. I believe these charges should be separately shown on the bill. With regard to the Demand Charge it should be denoted 18 whether it is based on the actual meter reading or is computed applying the minimum 19 ratchet. It is particularly important that a demand billed customer can readily see on their 20 bill if they have been minimum billed and/or billed for reactive power in order to take 21 22 action to avoid or minimize in future billings. Both the contract demand and maximum metered demand in the prior eleven months should be shown on each current bill. There 23 appears to be plenty of space in the "Meter Details" in which to show this information. 24 25 26 With regard to combining the Kentucky Economic Development Surcharge, Capacity Charge, Big Sandy 1 Operation Rider, Big Sandy Retirement Rider, Purchased Power 27 Adjustment, and Green Pricing Option riders I would suggest they be shown as a single 28 bill line. 29 30 Willhite RLW Exhibit 2 are examples of Duke, Cooperative, LGE and KU bills. Energy 31 and demand charges as well as minimums as applied and basis therefore are listed. 32 33 **RETURN ON EQUITY DISPARITY** 34
- Q. What return on equity is being requested in this case and what was granted in the
 Company's last case and what?
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A. In this case the Company is requesting a 10.31 percent return on equity other than for the Rockport pass through costs which are currently based on a 12.16 percent ROE. These

returns compare to 9.8 percent approved in the Company's last case PSC Case No. 2015-1 0396. The Rockport ROE was approved by the FERC in 2012. 2 3 4 Q. How does that compare with the recent Indiana Utility Regulatory Commission (IURC) approval in Case 44523? 5 6 7 A. In that case the IURC approved a return on equity of 9.95 percent on Indiana Michigan 8 Power Company's (I&M) share of certain environmental costs at the Rockport plant. This 9 compares to 12.16 percent FERC approved in the UPA. 10 **O**. Is there a pending case before the FERC? 11 12 Yes. On October 27, 2016 a group of wholesale customers¹ submitted a Complaint in 13 A. FERC Docket Number El 17-13 alleging that the 10.99 percent base rate on common 14 equity currently included in the formula transmission rates of the AEP East 15 Companies is unjust and unreasonable and should be reduced to 8.32 percent. 16 17 Q. Please address your concern with regard the ROE disparity? 18 19 In PSC Case No. 2015-00396 the Commission stated "As with the Commission, FERC is 20 A. 21 mandated to set rates that are fair, just, and reasonable. While the Commission may not agree with the manner in which FERC establishes ROE, we take note that the terms of a 22 23 FERC-approved contract have been found to legally constitute a fair, just, and reasonable rate. We also note that FERC's methods of setting an ROE have withstood prior 24 challenges." 25 26 The Rockport ROE approved five years ago is certainly out of line with current granted 27 ROE's. However, it appears this is a matter that will go unaddressed unless the Company 28 takes the initiative. 29 30 Does this conclude your testimony? 31 Q. 32 33 A. Yes.

¹ Complaint of American Municipal Power, Inc., Blue Ridge Power Agency, Craig-Botetourt Electric Cooperative, Indiana Michigan Municipal Distributors Association, Indiana Municipal Power Agency, Old Dominion Electric Cooperative, Inc. and Wabash Valley Power Association, Inc. ("Joint Complaint")



School and L.G.S. System Peak Day Load Profiles



Note: PS is abbreviation for Tariff K – 12 **Data Source:** KPCO_R_KPSC_1_73_Attachment41_LGS_Sec and KPCO_R_KPSC_1_73_Attachment50_PS_Sec