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March 1, 2018

**HAND DELIVERED**

Gwen R. Pinson  
Executive Director  
Public Service Commission  
211 Sower Boulevard  
P.O. Box 615  
Frankfort, KY 40602-0615

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MAR 01 2018

PUBLIC SERVICE  
COMMISSION

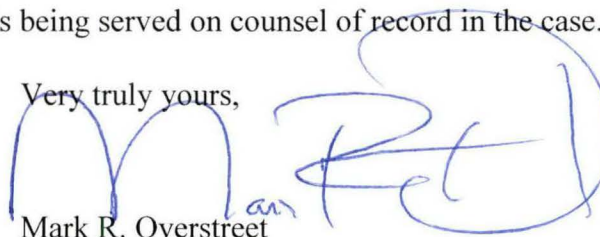
RE: **Case No. 2012-00578 (Post-Case Correspondence File)**

Dear Ms. Pinson:

Please accept for filing the original and ten copies of Kentucky Power Company's March 1, 2018 Annual Performance Report. The report is being filed in conformity with the Commission's October 7, 2013 Order in Case No. 2012-00578.

A copy of the report and this letter is being served on counsel of record in the case.

Very truly yours,



Mark R. Overstreet

MRO

**CERTIFICATE OF SERVICE**

I hereby certify that a copy of the foregoing letter and accompanying report were served by first class mail, postage prepaid upon the following parties of record, this 1<sup>st</sup> day of March 2018.

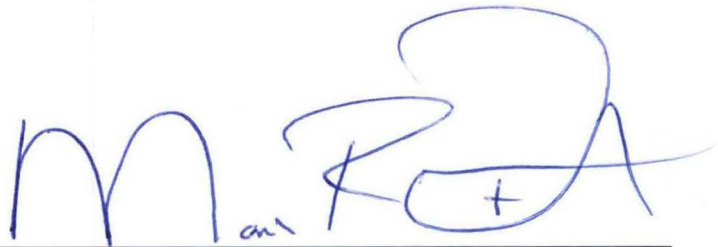
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Mark R. Overstreet

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PUBLIC SERVICE  
COMMISSION

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

In the Matter of:

The Application Of Kentucky Power Company For: )  
(1) A Certificate Of Public Convenience And Necessity )  
Authorizing The Transfer To The Company Of An )  
Undivided Fifty Percent Interest In The Mitchell )  
Generating Station And Associated Assets; (2) Approval )  
Of The Assumption By Kentucky Power Company Of )  
Certain Liabilities In Connection With The Transfer Of )  
The Mitchell Generating Station; (3) Declaratory Rulings; )  
(4) Deferral Of Costs Incurred In Connection With The )  
Company's Efforts To Meet Federal Clean Air Act And )  
Related Requirements; And (5) For All Other Required )  
Approvals And Relief )

Case No. 2012-00578

MITCHELL GENERATING PLANT: MARCH 1, 2018 ANNUAL PERFORMANCE  
REPORT AND REPORT ON POTENTIAL IMPACTS OF FUTURE ENVIRONMENTAL  
REGULATIONS

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- 2) Mitchell Plant Performance ..... 3
- 3) Mitchell Plant Unplanned System Outages..... 3
- 4) Mitchell Plant Operations & Maintenance ("O&M") Expenses ..... 3
- 5) Mitchell Plant Capital Investments ..... 4
- 6) Discussion of Environmental Regulations and Potential Future Impacts..... 4

1) **Introduction**

Kentucky Power Company files this report in conformity with the Kentucky Public Service Commission's October 7, 2013 Order in Case No. 2012-00578. Portions of the required information are provided in the following attachments:

Attachment 1: 2017 Mitchell Plant Performance Data

- i. Net Capacity Factor
- ii. Equivalent Forced Outage Rate ("EFOR")
- iii. Equivalent Availability Factor
- iv. Net Unit Heat Rate

Attachment 2: 2017 Mitchell Unplanned System Outages

2) **Mitchell Plant Performance**

Attachment 1 to this report includes 2017 performance data for Mitchell Unit 1 and Unit 2. Compared to its performance in 2016, Unit 2 was much improved with an annual Net Capacity Factor of 65.8% and an EFOR of 3.9%. The performance of Unit 1 was impacted by a turbine failure which contributed to an annual Net Capacity Factor of 46.5% and an EFOR of 26.2%.

3) **Mitchell Plant Unplanned System Outages**

Attachment 2 to this report identifies the unplanned outage events that occurred at Mitchell Units 1 and 2 during the 2017 calendar year. Unplanned outages are those outage events not included on the planned maintenance schedule. Both maintenance outages (MO) and forced outages (U1, U2, & U3) are considered unplanned outages.

The longest unplanned outage event at Mitchell Unit 1 lasted 61 days and was a forced outage caused by a turbine failure. The longest outage at Unit 2 was a 28-day maintenance outage in April/May for inspections and repair on the economizer, air heater, precipitator and a pulverizer rebuild. The longest forced outage in 2017 at Unit 2 was 4 days at the beginning of the year (11 days total, starting in December of 2016) for repairs to the boiler feed pump.

4) **Mitchell Plant Operations & Maintenance ("O&M") Expenses**

Kentucky Power's share of the 2017 budgeted and actual O&M expenses for the Mitchell Plant, as well as the Company's share of the budgeted O&M expenses for 2018, are included in Table 1 below.<sup>1</sup> The actual Company share of O&M expense in 2017 was approximately \$27.6 million,

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<sup>1</sup> The budgeted expenses, which include labor, differ from the amounts provided in response to AG 1-23 in Case No. 2017-00179, which were limited to steam maintenance expense only (FERC accounts 510-514).

compared to a budgeted amount of approximately \$26.2 million. This variance was due to costs associated with the unplanned turbine failure.

Kentucky Power's share of the 2018 budgeted O&M expense is \$31.1 million and reflects a 19% increase over 2017. The increase is due to scheduled FGD outage work in 2018 on Unit 1 and major inspections and repair outage work on Unit 2.

**Table 1**

<b>Mitchell Plant O&amp;M Expense</b>		
<b>2017</b>		<b>2018</b>
<b>Actuals</b>	<b>Budget</b>	<b>Budget</b>
<b>\$27,562,310</b>	<b>\$26,185,642</b>	<b>\$31,062,166</b>

**NOTES:**  
Totals reflect Kentucky Power's 50% ownership share of the Mitchell Plant.

**5) Mitchell Plant Capital Investments**

Kentucky Power's share of the 2017 actual and budgeted level of capital investment for the Mitchell Plant, as well as the Company's forecasted share of capital investment for 2018, are included in Table 2.

In 2017, the Company's share of capital spending at the Mitchell Plant was approximately \$13.0 million compared to a budget of \$21.9 million. The lower than budgeted capital expenditure mostly resulted from the deferral until 2018 of budgeted work on the landfill expansion. The work was deferred due to a delay in receiving the necessary permits.

The capital expenditures budgeted for 2018 includes the deferred landfill expansion work.

**Table 2**

<b>Mitchell Plant Capital Investment</b>		
<b>2017</b>		<b>2018</b>
<b>Actuals</b>	<b>Budget</b>	<b>Budget</b>
<b>\$12,977,158</b>	<b>\$21,932,934</b>	<b>\$20,162,310</b>

**NOTES:**  
Totals reflect Kentucky Power's 50% ownership share of the Mitchell Plant.

**6) Discussion of Environmental Regulations and Potential Future Impacts**

The Mitchell Plant operates in compliance with all applicable environmental regulations. Federal regulations that have potential future impacts on the Mitchell Plant include the following:

### **Clean Water Act (“316(b)”) Rule**

A final rule under Section 316(b) of the Clean Water Act became effective on October 14, 2014. The final rule affects all existing power plants withdrawing more than two million gallons per day (“mgd”) of cooling water. The rule offers seven technology options to comply with a standard that addresses impingement of aquatic organisms on cooling water intake screens, and requires site-specific studies to determine appropriate compliance measures to address entrainment of organisms in cooling water systems for those facilities withdrawing more than 125 mgd. The overall goal of the rule is to decrease impacts on fish and other aquatic organisms from operation of cooling water systems. Additional requirements may be imposed as a result of consultation with other federal agencies to protect threatened and endangered species and their habitats.

Mitchell Plant cooling water withdrawal rate is 31 mgd, and thus is well below the entrainment study threshold of 125 mgd. In addition, facilities with existing closed cycle recirculating cooling systems, such as Mitchell, may not be required to make any technology changes. This determination will be made by the West Virginia Department of Environmental Protection as part of its current permit renewal review of Mitchell Plant’s National Pollutant Discharge Elimination System permit. The permit is expected to be issued by the second quarter of 2018. If additional capital investment is required, the magnitude is expected to be relatively small compared to the investment that would be needed if the plant was not equipped with cooling towers.

### **Coal Combustion Residuals Rule**

The Coal Combustion Residuals (“CCR”) Rule regulates coal combustion residuals as a non-hazardous solid waste under Subtitle D of the Resource Conservation and Recovery Act. It became effective October 19, 2015. The CCR Rule is a comprehensive rule applicable to new and existing CCR landfills and CCR surface impoundments. It contains implementation schedules, locational restrictions, liner design for new landfills, surface impoundment structural integrity requirements, CCR unit operating criteria, groundwater monitoring and corrective actions, closure and post-closure care, and recordkeeping, notification and internet posting obligations. EPA has not included a mandatory liner retrofit requirement for existing, unlined CCR surface impoundments. Use of an existing unlined surface impoundment must cease if groundwater monitoring data indicate there has been a release from the impoundment that exceeds applicable groundwater protection standards.

Installation of a groundwater monitoring network has been completed at the Mitchell Plant and groundwater sampling commenced in late 2016. Sampling events occurred approximately

quarterly in 2017 to collect groundwater assessment data. Sampling data will be posted to the public operating record in March 2018 and will be used in the determination of compliance with the CCR Rule later in 2018. Mitchell Plant currently is equipped with a dry fly ash handling system and a dry ash landfill to meet current permit requirements which are expected to mitigate the impact of the CCR Rule on the plant's future compliance costs.

### **Effluent Limitation Guidelines and Standards**

On September 30, 2015 EPA finalized a revision to the Effluent Limitation Guidelines and Standards for the Steam Electric Power Generating category (ELG Rule). The ELG Rule requires compliance with technology-based limits for waste water discharges from power plants. The main focus of the rule is on process water and wastewater associated with the handling of coal combustion wastes and by-products from coal-fired generation. Specifically, the ELG Rule will prohibit the discharge of fly ash and bottom ash transport water. It also requires the installation of physical, chemical, and biological treatment for FGD wastewater.

On September 18, 2017, USEPA issued the "Postponement of Certain Compliance Dates for the Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category" (82 Fed Reg. at 43,494) ("Postponement Rule"). In this Postponement Rule, USEPA postponed the earliest compliance dates for the new, more stringent, effluent limitations for FGD wastewaters and bottom ash transport wastewaters in the 2015 Rule for a period of two years. (82 Fed Reg. at 43,494). This postponement will make the "as soon as possible date" November 1, 2020 instead of November 1, 2018 for FGD wastewater and bottom ash transport waters. The postponement is intended as a temporary measure to preserve the status quo for FGD wastewater and bottom ash transport water while USEPA conducts and completes its next rulemaking concerning those waste streams. (82 Fed Reg. at 43,494). USEPA has stated it will take approximately three years to propose and finalize a new rule (Fall 2020) and anticipates the next rulemaking will necessarily address compliance dates in some fashion. (82 Fed Reg. at 43,498)

Kentucky Power is awaiting the results of the USEPA rulemaking described in the Postponement Rule prior to evaluating what, if any, impact changes to the ELG Rule will have on the Mitchell Plant.

### **Clean Power Plan**

On August 3, 2015, EPA finalized two rulemakings to regulate CO<sub>2</sub> emissions from fossil fuel-based electric generating units. EPA finalized New Source Performance Standards under Section 111(b) of the Clean Air Act that apply to new fossil units as well as separate standards for modified or reconstructed existing fossil steam units. Separately, EPA finalized a rule referred to as the Clean Power Plan, which establishes CO<sub>2</sub> emission guidelines for existing fossil generation sources under Section 111(d) of the Clean Air Act. EPA also issued for public



comment a proposed Federal Implementation Plan to implement the Clean Power Plan if states fail to submit or do not develop an approvable state plan for compliance.

The final rules are being challenged in the courts. In February 2016, the U.S. Supreme Court issued a stay on the final Clean Power Plan, including all of the deadlines for submission of initial or final state plans. The stay will remain in effect until a final decision is issued by the U.S. Court of Appeals for the District of Columbia Circuit and the U.S. Supreme Court considers any petition for review.

In March 2017, the EPA filed in the U.S. Court of Appeals for the District of Columbia Circuit notice of 1) an Executive Order from the President of the United States titled “Promoting Energy Independence and Economic Growth” directing the EPA to review the Clean Power Plan and related rules; 2) the EPA’s initiation of a review of the Clean Power Plan and 3) if the EPA determines appropriate, a forthcoming rulemaking related to the Clean Power Plan consistent with the Executive Order. In this same filing, the EPA also presented a motion to hold the litigation in abeyance until 30 days after the conclusion of review and any resulting rulemaking. On April 28, 2017, the Court stayed the Clean Power Plan litigation for 60 days and directed parties to the case to file briefs addressing the future of the litigation. The Court has continued to hold the case in abeyance and EPA submits periodic status reports on its rulemaking activities.

On October 16, 2017, EPA issued a proposed rule to repeal the Clean Power Plan. Comments on this proposed rule are due by April 26, 2018. AEP is preparing comments on the proposed rule. On December 18, 2017, EPA released an advance notice of proposed rulemaking (ANPR), seeking information that EPA should consider as it develops new proposed guidelines to reduce emissions of greenhouse gases from existing electric generating units. Comments on this ANPR were due by February 26, 2018.

AEP will continue to closely monitor EPA’s action on the Clean Power Plan, information submitted in response to the ANPR and any subsequent guidelines proposed by EPA.

**Mitchell Generating Plant  
Performance Data  
2017**

KPSC Case No. 2012-00578  
March 1, 2018  
Attachment 1  
Page 1 of 1

**Mitchell Unit 1**

**Net Max Capacity: 770**

Month	Forced Outage Rate (%)	Equiv Forced Outage Rate (%)	Equiv. Avail. Factor (%)	Net Cap. Factor (%)	Heat Rate Actual (BTU/KWH)
Jan 17	89.55	89.98	8.32	7.48	10,504
Feb 17	100.00	100.00	0.00	0.00	0
Mar 17	100.00	100.00	0.00	0.00	0
Apr 17	0.00	0.00	43.99	34.36	10,001
May 17	0.00	0.21	99.20	77.76	10,042
Jun 17	3.53	5.05	94.63	66.00	10,351
Jul 17	0.00	8.64	89.15	71.45	10,967
Aug 17	0.00	11.93	87.23	67.31	10,654
Sep 17	26.01	26.33	55.23	36.79	10,563
Oct 17	22.72	22.96	78.28	51.22	10,375
Nov 17	0.00	0.00	99.38	68.90	10,337
Dec 17	0.00	0.07	99.32	72.75	9,943
<b>YTD TOTAL</b>	<b>23.85</b>	<b>26.15</b>	<b>63.31</b>	<b>46.50</b>	<b>10,382</b>

**Mitchell Unit 2**

**Net Max Capacity: 790**

Month	Forced Outage Rate (%)	Equiv Forced Outage Rate (%)	Equiv. Avail. Factor (%)	Net Cap. Factor (%)	Heat Rate Actual (BTU/KWH)
Jan 17	13.31	14.59	83.32	69.31	9,878
Feb 17	0.00	2.34	96.23	70.06	10,125
Mar 17	0.00	4.63	95.08	83.09	9,806
Apr 17	0.00	11.86	40.31	37.53	9,702
May 17	11.85	13.61	50.79	39.72	9,443
Jun 17	0.00	1.56	81.39	61.95	8,612
Jul 17	0.00	1.96	97.72	77.89	10,121
Aug 17	0.00	0.46	98.40	74.03	10,073
Sep 17	0.00	0.17	98.41	71.45	10,022
Oct 17	0.00	0.59	97.02	75.10	9,024
Nov 17	0.00	0.03	99.09	72.00	9,439
Dec 17	0.00	2.02	79.99	56.92	9,754
<b>YTD TOTAL</b>	<b>1.96</b>	<b>3.91</b>	<b>84.77</b>	<b>65.77</b>	<b>9,686</b>

Mitchell Generating Plant  
Unplanned Outages  
2017

Kentucky Power Co.  
01/01/2017 To 12/31/2017  
Mitchell Unit 1

Month	From	To	Duration (Hrs)	Event Type	Reason for Outage
January	12/29/16 9:50 AM	1/6/17 5:47 AM	125.78*	MO	Air Heater problem.
January	1/8/17 10:24 PM	3/11/17 12:28 AM	1466.07	U1	"B" LP Turbine Failure
June	6/18/17 8:10 PM	6/19/17 2:00 AM	5.83	U1	stator water low flow problem
June	6/19/17 2:00 AM	6/19/17 9:34 PM	19.57	U1	Fiber Optic System alarm
September	9/6/17 1:03 PM	9/6/17 2:19 PM	1.27	U1	Low Excess Air
September	9/7/17 6:00 AM	9/14/17 6:50 PM	180.83	MO	Boiler inspection and repair and other general maintenance.
September	9/25/17 8:08 AM	10/2/17 11:45 PM	183.62	U3	Main Turbine Bearing High Temperature
October	10/3/17 1:00 PM	10/5/17 5:58 AM	40.97	SF	Drain line failure coming off flash tank.
October	10/13/17 1:35 AM	10/13/17 10:33 AM	8.97	U1	Furnace Pressure trip
October	10/25/17 1:39 PM	10/28/17 2:50 AM	61.18	U1	Steam lead leak in 2nd Reheat

Kentucky Power Co.  
01/01/2017 To 12/31/2017  
Mitchell Unit 2

Month	From	To	Duration (Hrs)	Event Type	Reason for Outage
January	12/24/16 11:22 AM	1/4/17 5:56 PM	89.93*	U1	Boiler Feed Pump Repair
January	1/12/17 1:24 PM	1/12/17 10:31 PM	9.12	U1	Chemical Excursion
April	4/14/17 11:48 PM	5/13/17 8:12 AM	680.40	MO	Inspection and repair of Economizer partition plate, an air heater, and the Precipitator.
May	5/13/17 8:12 AM	5/14/17 1:58 AM	17.77	SF	Startup Failure
May	5/23/17 4:34 PM	5/25/17 3:46 AM	35.20	U2	Generator Field Ground
June	6/5/17 11:35 PM	6/9/17 9:00 PM	93.42	MO	Inspection and repair of auxiliary condenser, piping to vent stack, control valve to the main turbine, and boiler.
December	12/17/17 1:59 AM	12/22/17 4:11 PM	134.20	MO	General maintenance to repair ID Fan hydraulic oil leak, turbine bearing oil leak, coal pipe, and valves.

NOTES:

\* Hours shown are for the portion of the outage that occurred in 2017 only.

Event Type	NERC Description
MO	Maintenance Outage - can be deferred beyond the end of the next weekend
SF	Startup Failure - results when a unit is unable to synchronize within a
U1	Unplanned (Forced) Outage - requires immediate removal from service
U2	Unplanned (Forced) Outage - required removal from service within 6 hours
U3	Unplanned (Forced) Outage - can be postponed beyond 6 hours but requires