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**PUBLIC SERVICE
COMMISSION**

Hon. Jeff DeRouen, Executive Director
Case No. 2013-00259
Kentucky Public Service Commission
211 Sower Blvd.
Frankfort, KY 40601

**Re: Case No. 2013-00259 Supplemental Direct Testimony of Jeffrey Loiter on Behalf of
Sonia McElroy and Sierra Club (Public Version)**

Dear Mr. DeRouen,

Enclosed, please find one (1) original and ten (10) copies of the Supplemental Direct Testimony of Jeffrey Loiter on behalf of Sonia McElroy and Sierra Club. By copy of this letter, all parties listed on the Certificate of Service have been served via USPS first class mail and e-mail. Please place this document on file.

Sincerely,

Sincerely,

Shannon Fisk
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COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

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PUBLIC SERVICE
COMMISSION

AN APPLICATION OF EAST KENTUCKY POWER)
COOPERATIVE, INC. FOR A CERTIFICATE OF)
PUBLIC CONVENIENCE AND NECESSITY FOR)
ALTERATION OF CERTAIN EQUIPMENT AT THE) CASE NO. 2013-00259
COOPER STATION AND APPROVAL OF A)
COMPLIANCE PLAN AMENDMENT FOR)
ENVIRONMENTAL SURCHARGE COST)
RECOVERY)

Supplemental Direct Testimony of
Jeffrey Loiter

Public, Redacted Version

On Behalf of
Sonia McElroy and Sierra Club

December 27, 2013

1 **(I.) Introduction**

2 **Q. Please state your name and business address.**

3 A. My name is Jeffrey Loiter and my business address is Optimal Energy,
4 Incorporated, 10600 Route 116, Hinesburg, Vermont, 05461.

5 **Q. On whose behalf are you testifying?**

6 A. I am testifying on behalf of Sonia McElroy and Sierra Club.

7 **Q. Did you file or cause to be filed direct testimony in this case on November 27,**
8 **2013?**

9 A: Yes.

10 **Q: Did you review the information East Kentucky Power Cooperative, Inc.**
11 **(“EKPC” or “the Company”) provided in response to the Commission’s**
12 **December 10, 2013 Order granting Sonia McElroy and Sierra Club’s**
13 **November 21, 2013 motion to compel a response to certain discovery**
14 **requests?**

15 A: Yes.

16 **Q: Based on your review of this information, do you have any additional or**
17 **updated findings to present to the Commission?**

18 A: Yes. The material provided in response to the motion to compel clarified the
19 operating costs of the Cooper Station generally and Cooper Unit 1 in particular.
20 In my direct testimony, I estimated Cooper Unit 1’s operating costs, which I used
21 as the basis for an estimate of the potential efficiency savings that the Company
22 could realize if it used the funds needed to operate Cooper Unit 1 on efficiency
23 programs instead. *See* Loiter Dir. Testimony at 13-14. Specifically, I used the
24 Company’s estimate of the ongoing annual operating and maintenance (“O&M”)
25 costs of Cooper Unit 1 (\$2.6 million) and an estimate I developed of other fuel-
26 based O&M costs required to generate electricity from Cooper Unit 1 (between
27 [REDACTED] as a lower bound), to create an estimate of
28 Cooper Unit’s 1 operating costs.¹ I developed the fuel-based O&M estimate

¹I also considered the capital costs of the Cooper Unit 1 retrofit project (\$15 million) as part of the full cost to generate electricity from Cooper Unit 1, but assumed that the

1 based on the Company’s projected fuel costs and capacity factor, because the
2 Company did not provide this cost estimate directly.

3 **Q: What did you conclude based on your estimate of the full cost to generate**
4 **electricity from Cooper Unit 1?**

5 A: Based on the estimated O&M spending for the environmental controls and fuel-
6 based operating costs, I concluded that EKPC could achieve efficiency savings of
7 more than 244,000 MWh by 2017 and over 533,000 MWh by 2021. *See Loiter*
8 *Dir. Testimony at 13-14.*

9 **Q: Do you have an updated savings estimate?**

10 A: Yes. In light of the operating cost information EKPC provided in response to the
11 motion to compel, I have updated my estimate of the efficiency savings that the
12 Company could realize if it spent the funds needed to operate Cooper Unit 1 on
13 efficiency programs instead. My revised estimate shows somewhat lower
14 efficiency savings than I initially estimated in the short run, but higher efficiency
15 savings in the long term, based on Cooper Unit 1 incurring greater operating costs
16 in the long run than I originally assumed. The table below summarizes the
17 changes in my estimate resulting from the new information provided in response
18 to the Commission’s December 10, 2013 Order.

	2017		2021	
	Original	Revised	Original	Revised
EE MWh	244,462	181,745	533,819	646,808
EE as % of load	1.7%	1.3%	3.5%	4.2%
EE peak MW	36	26	78	94
DR peak MW	22	22	22	22
Total peak MW	58	49	100	117

19
20 **Q: What new cost information did the Company provide?**

21 A: In addition to the Company’s \$2.6 million estimate for annual O&M costs for the
22 Cooper Unit 1 environmental controls project, EKPC provided the data that
23 allowed Witness Comings to estimate fixed and variable O&M costs and fuel

capital cost spending would be allocated to demand response programs rather than energy efficiency programs.

1 costs to operate Cooper Unit 1 for generation. Based on the new information, the
2 cost to operate Cooper Unit 1 for generation is between [REDACTED] per
3 year over the 2014 to 2023 time period, with an average of [REDACTED]. From
4 2014 to 2017, the new costs are lower than my initial estimate; after 2017 the new
5 costs are higher than my initial estimate.

6 **Q: Why are the operating costs in the near term lower than your original**
7 **estimate?**

8 The lower operating cost estimate for 2014-2017 is due to significantly lower
9 projected generation during this period, as compared to what the Company
10 previously estimated. EKPC's new data shows an average capacity factor of [REDACTED]
11 for Cooper Unit 1 from 2014-2017, compared to an average of [REDACTED] based on data
12 previously provided in Supplemental Response 15d. As a result, if annual O&M
13 costs for both environmental controls and general operation (i.e., fixed and
14 variable O&M and fuel costs) were spent on efficiency programs, EKPC could
15 acquire over 181,000 MWh of cumulative annual savings by 2017. This is lower
16 than my original estimate of 244,000 MWh, but still nearly twice the amount
17 proposed by EKPC as "aggressive." I believe that this amount of efficiency is
18 reasonable and could be acquired in addition to the amount currently planned by
19 EKPC.

20 **Q: What about in the longer term?**

21 EKPC's estimate of generation in later years is far greater than what previous data
22 indicated. As a result, my revised efficiency estimate for 2021 is more than
23 646,000 MWh, over 100,000 MWh greater than my original estimate of 533,000
24 MWh. Although EKPC has not proposed any efficiency program targets beyond
25 2017, these savings would be in addition to any savings remaining from programs
26 delivered through that date. Furthermore, this is a significant amount of savings,
27 though still considerably below achievements of other utilities that have achieved
28 savings of between 0.5% and 1% per year. The 2017 savings estimate, for
29 example, would represent 1.3% of EKPC's forecast load in that year, or
30 incremental annual savings of slightly more than 0.3%, a level that is certainly
31 achievable. Note that I assumed spending beginning in 2014, and therefore only

1 four years of program activity as compared to the five years contemplated in
2 EKPC's stated goal. In the longer term, savings would reach 4.2% of EKPC's
3 forecast load in 2021, or an average of about 0.5% per year.

4 **Q: Based on the new cost information and your revised savings estimates, how**
5 **does the energy that would be generated by Cooper Unit 1 compare to the**
6 **energy that would be saved through efficiency at the same cost?**

7 A: Spending the amounts described above on efficiency would result in greater
8 energy "production" than would operating Cooper Unit 1. From 2014 through
9 2017, Cooper Unit 1 would generate a total of about [REDACTED] but the
10 efficiency that could be acquired for the costs of running Cooper Unit 1 for those
11 four years would be at least 1.4 million MWh over the lifetime of the efficiency
12 measures.

13 **Q: What did you assume for the average cost of MWh savings?**

14 A: As I did in my direct testimony, I used the average cost per annual MWh for a
15 selection of EKPC's "new" efficiency programs, as described in its 2012 IRP. I
16 note that this average cost of saved energy (\$44 per MWh, levelized) is [REDACTED]
17 [REDACTED]

18 **Q: Does your estimate of the peak demand reduction also change as a result of**
19 **the new information provided by the Company?**

20 A: Yes. As in my Direct Testimony (*see* Loiter Direct Testimony at 14), I used the
21 relative peak savings from the existing programs presented in the IRP to estimate
22 summer peak reduction of 26 MW by 2017 and 94 MW by 2021. Again, these are
23 just the impacts from efficiency programs with budgets equal to an estimate of the
24 annual costs of operating Cooper Unit 1. These figures do not include the peak
25 demand reduction that could be achieved through spending the \$15 million for the
26 proposed Cooper Unit 1 project on demand response programs instead. I have not
27 revised my estimate of those potential savings.

1 **Q: Did the Company provide any other information in response to the**
2 **Commission’s December 10, 2013 order that has a bearing on your testimony**
3 **or analysis?**

4 A: Yes. The revised information provided by the Company resulted in Mr. Comings
5 revising his estimate of future environmental compliance costs for Cooper Unit 1.
6 There are also annual non-environmental capital expenditures that EKPC must
7 make to keep the Cooper Station operating, data which are included in the recent
8 information provided by the Company. These capital costs could also be
9 allocated to demand response or energy efficiency spending rather than to
10 maintaining Cooper Unit 1, but I have not included these amounts in my analysis.
11 If I did, it would result in higher estimates of future demand-side energy savings
12 and peak reductions. My analysis therefore likely underestimates future demand-
13 side savings that would result from allocating all of the costs necessary to operate
14 Cooper nit 1 to energy efficiency and demand response.

15 **Q: Do you believe that your estimates of savings from demand response and**
16 **energy efficiency are reasonable for EKPC to achieve?**

17 A: Yes, I do.

18 **Q: What is the basis for your belief?**

19 A: There is an extensive amount of industry experience and a large body of
20 published literature that supports my contention that annual savings of the scale I
21 estimate are widely achievable in many jurisdictions, by a variety of
22 administrators, and under a range of funding models. My direct testimony
23 provided examples of actual savings levels achieved in several nearby states that
24 indicates the feasibility of achieving savings even higher than I have estimated
25 here. Importantly, achieving these savings need not require additional programs
26 beyond those already implemented and planned by the Company. These
27 programs, as presented in the IRP, appear to cover many of the major end-uses for
28 all types of customers.

29
30 Rather than look for additional programs and measures at this time, the Company
31 and the Commission should consider how these programs can be delivered to a

1 greater number of customers and on how to increase the savings per participant.
2 This can be accomplished in a number of ways, including increased spending on
3 marketing, outreach and training to trade allies, account management, and
4 technical assistance. All of these activities promote customer participation. Higher
5 incentive levels can also increase participation, although best practice programs
6 combine incentive payments with these other activities because there are many
7 barriers to efficiency investments beyond first-cost economic considerations.
8 These barriers inhibit consumers from making economically rational decisions
9 and investing in cost effective energy efficiency measures, and include split
10 incentives, lack of information, transaction costs, and lack of equipment
11 availability, among others. Program efforts should be directed at addressing some
12 or all of these barriers.


CERTIFICATE OF SERVICE

I certify that I have filed with the Commission and served via U.S. first class mail the foregoing Supplemental Direct Testimony of Jeffrey Loiter on Behalf of Sonia McElroy and Sierra Club (Public Version) on December 27th, 2013 to the following:

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