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

**In the Matter of:**

**AN APPLICATION OF EAST KENTUCKY POWER )  
POWER COOPERATIVE, INC. FOR A CERTIFICATE )  
OF PUBLIC CONVENIENCE AND NECESSITY FOR )  
ALTERATION OF CERTAIN EQUIPMENT AT THE )  
COOPER STATION AND APPROVAL OF A )  
COMPLIANCE PLAN AMENDMENT FOR )  
ENVIRONMENTAL SURCHARGE COST )  
RECOVERY )**

**CASE NO.  
2013-00259**

**RESPONSES TO SONIA MCELROY AND SIERRA CLUB'S INITIAL REQUESTS FOR  
INFORMATION TO  
EAST KENTUCKY POWER COOPERATIVE, INC.  
DATED OCTOBER 4, 2013  
SUPPLEMENTAL RESPONSES**

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

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**CERTIFICATE**

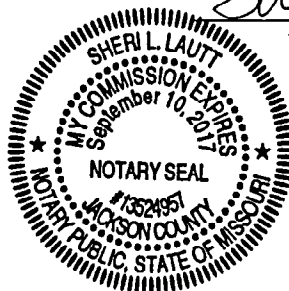
STATE OF Missouri )  
COUNTY OF Jackson )

Block Andrews, being duly sworn, states that he has supervised the preparation of the supplemental responses of East Kentucky Power Cooperative, Inc. ("EKPC") to Sonia McElroy and Sierra Club's Initial Requests for Information filed on October 28, 2013 contained in the above-referenced case, and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

Block Andrews

Subscribed and sworn before me on this 6<sup>th</sup> day of November, 2013.

Sheri L. Lutt  
Notary Public





**EAST KENTUCKY POWER COOPERATIVE, INC.  
PSC CASE NO. 2013-00259  
RESPONSE TO INFORMATION REQUEST**

**INTERVENORS' INITIAL REQUEST FOR INFORMATION DATED 10/04/13  
REQUEST 13**

**RESPONSIBLE PARTY: James Read**

**Request 13.** Refer to the Application, Exhibit 1a, page 5 of 14.

**Request 13a.** Identify the NPV of each of the proposals on the “Short List”

**Response 13a.** Please see EKPC’s response to the Staff’s Initial Request, Response 7.

**Request 13b.** Produce any analyses, modeling files, and workpapers (in electronic format with formulas intact) used to calculate the NPV of each of the proposals on the “Short List”.

**Response 13b.** See EKPC’s response to the Staff’s Initial Request, Response 5.

**Request 13c.** Identify for each year of the analyses used to calculate the NPV of each of the proposals on the “Short List” the value for each of the following inputs used in the NPV analysis:

- i. Energy prices.
- ii. Coal prices.
- iii. Natural gas prices.
- iv. Capacity prices.
- v. Carbon prices.

- vi. Renewable energy credits.
- vii. Variable O&M.
- viii. Fixed O&M.
- ix. O&M costs to comply with environmental regulations.
- x. Environmental capital costs.
- xi. Non-environmental capital costs.
- xii. Unit dispatch price.
- xiii. Discount rate.
- xiv. Book life.
- xv. Analysis period (years).
- xvi. SO<sub>2</sub> allowances.
- xvii. NO<sub>x</sub> allowances.
- xviii. Nameplate capacity.
- xix. Maximum summer capacity.

**Response 13c.i-xix**

- i. Energy prices - See EKPC's response to the Staff's Initial Request, Response 5.
- ii. Coal prices - Included on the attached CD.
- iii. Natural gas prices - Included on the attached CD.
- iv. Capacity prices - See EKPC's response to the Staff's Initial Request, Response 5.
- v. Carbon prices - Not explicitly incorporated.
- vi. Renewable energy credits - See EKPC's response to the Staff's Initial Request, Response 5.
- vii. Variable O&M - See EKPC's response to the Staff's Initial Request, Response 5 for new units. Existing units are included on the attached CD, filed under seal and subject to confidential treatment.

- viii. Fixed O&M - See EKPC's response to the Staff's Initial Request, Response 5. Only applicable to each proposal; fixed O&M for all existing units except Dale Station and Cooper 1 are considered embedded costs.
- ix. O&M costs to comply with environmental regulations - See EKPC's response to the Staff's Initial Request, Response 5. Only applicable to each proposal.
- x. Environmental capital costs - See EKPC's response to the Staff's Initial Request, Response 5. Only applicable to each proposal.
- xi. Non-environmental capital costs - See EKPC's response to the Staff's Initial Request, Response 5. Only applicable to each proposal.
- xii. Unit dispatch price - See EKPC's response to the Staff's Initial Request, Response 5 and attached CD, filed under seal and subject to confidential treatment.
- xiii. Discount rate - See EKPC's response to the Staff's Initial Request, Response 5.
- xiv. Book life - Not applicable.
- xv. Analysis period (years) - See EKPC's response to the Staff's Initial Request, Response 5.
- xvi. SO<sub>2</sub> allowances - See EKPC's response to the Staff's Initial Request, Response 5.
- xvii. NO<sub>x</sub> allowances - See EKPC's response to the Staff's Initial Request, Response 5.
- xviii. Nameplate capacity - Not applicable.
- xix. Maximum summer capacity - See EKPC's response to the Staff's Initial Request, Response 5. Only applicable to each proposal.

**Request 13d.** Please provide any analyses used to develop the inputs listed above with supporting workbooks in electronic, machine-readable format with formulas intact.

**Response 13d.** Inputs were received from third parties, either forecasting experts or the individual proposals. No separate analysis was completed to derive the inputs.

**Supplemental Response to Response 13c – Responsible Party: Julia J. Tucker**

**Response 13c.ii and iii** Please see the attached file for the labels on coal data. The coal and gas data were provided by ACES, who gathers coal and gas data from various sources and provides the information to EKPC. As the coal and gas data provided reflects a compilation by ACES, there are no formulas included.

**Response 13c. vii and xii** The Cooper Unit 1 data is provided in the specific Cooper Unit 1 bid data and the analysis for that bid only. Cooper Unit 1 was not included in the Base Case. The information provided on the “Data” tab is the results from the RTSim model, thus there are no formulas. The one scenario (cell A1 on the “Data” tab) is the Base Case data. The Staff’s Initial Request, Response 5 contains the results for each individual bid. The “Data” tab is the Base Case data, which is common across all bids.

**Response 13c.ix** Any incremental O&M (variable or fixed) or capital costs created by each bid was reflected with that particular bid data. The Base Case was to retire Dale Station and Cooper Unit 1 and not buy anything else. There are no incremental environmental control costs included in the Base Case.

**EAST KENTUCKY POWER COOPERATIVE, INC.**  
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**INTERVENORS' INITIAL REQUEST FOR INFORMATION DATED 10/04/13**  
**REQUEST 15**

**RESPONSIBLE PARTY:            Julia J. Tucker**

**Request 15.**            Refer to Application Exhibit 1a, page 8 of 14, referring to the project being considered in this filing: “The greatest impact to unit operation will be when only unit 1 is in operation. During that time, unit 1 will be restricted to a minimum load of approximately 100 MW in order for the scrubber to continue operation. ”

**Request 15a.**            Please provide analyses to support this statement.

**Response 15a.**            See EKPC's response to Sierra Club's Initial Request, Response 14.

**Request 15b.**            Please explain how the “minimum load of approximately 100 MW” limitation was treated in the NPV analysis for the Cooper retrofit project.

**Response 15b.**            See EKPC's response to Sierra Club's Initial Request, Response 14c. The minimum load is being raised from 45 MW to 100 MW and the only costs to accomplish this are the fuel and scrubber costs. These variable costs are reflected in the production cost data. The energy margins incorporated in the NPV analysis reflect the 100 MW minimum load constraint on Cooper Unit No. 1. Energy margins were calculated in the RTSim generation simulation software.

**Request 15c.**            Please provide the current minimum load for Cooper unit 1.



**Response 15c.** Current minimum load is 45 MW.

**Request 15d.** Please provide the projected annual capacity factor or annual generation (in MWh) of Cooper unit 1 for each year of the NPV analysis.

**Response 15d.** See EKPC's response to the Staff's Initial Request, Response 5.

**Request 15e.** Does an approximately 100 MW minimum load after the project change the flexibility of that unit, compared with before the project?

- i. If so, please explain.
- ii. If not, explain why not.

**Response 15e.** See EKPC's response to Sierra Club's Initial Request, Response 14.

**Supplemental Response to Response 15d – Responsible Party: Julia J. Tucker**

**Response 15d.** Please see the attached spreadsheet for the annual capacity factors for Cooper Unit 1.

**EAST KENTUCKY POWER COOPERATIVE, INC.**  
**PSC CASE NO. 2013-00259**  
**RESPONSE TO INFORMATION REQUEST**

**INTERVENORS' INITIAL REQUEST FOR INFORMATION DATED 10/04/13**  
**REQUEST 38**

**RESPONSIBLE PARTY:               Block Andrews**

**Request 38.**               Refer to the Direct Testimony of Block Andrews, page 4, lines 14-19.

**Request 38a.**               Did Burns & McDonnell or EKPC identify any options beyond that of ducting Cooper 1 exhaust through the Cooper 2 DFGD/PJFF system?

- i.       If so, please enumerate all compliance options discussed or identified.
- ii.      If no other options were discussed or identified, please explain why not.

**Responses 38a.**           Burns & McDonnell looked at Mercury controls and Dry Sorbent Injection in combination with either a new full fabric filter system, polishing fabric filter, conversion of existing ESP to a fabric filter system, ESP upgrades, or using ESP units 1 and 2 in series.

**Request 38b.**               Did Burns & McDonnell or EKPC consider emissions averaging as a compliance option?

- i.       If so, please provide analyses and workpapers (in electronic, machine-readable format) related to the consideration of emissions averaging.
- ii.      If not, why not?

**Responses 38b.** Yes. The MATS rule allows either individual unit emissions levels or multiple unit averaging. Unit averaging adds an additional level of complexity by nature of having to coordinate multiple unit emissions based on when and how they operate. No further evaluation of unit averaging was performed.

**Request 38c.** Did Burns & McDonnell or EKPC consider injecting dry sorbent used at the dry FGD and pumping it directly to Cooper 1's exhaust, ahead of the ESP (effectively creating a DSI system) as a compliance option?

- i. If so, please provide analyses and workpapers (in electronic, machine-readable format) related to the consideration of that option.
- ii. If not, why not?

**Responses 38c.** Burns & McDonnell evaluated using Trona and Sodium Bicarbonate as the sorbent to control acid gases. We did not evaluate the hydrated lime sorbent used in Unit 2 FGD.

**Responses 38c(ii).** Based on the design coal, 92% SO<sub>2</sub> removal is required to meet MATS limit. A 95% HCl removal is required to meet the MATS limit. Hydrated lime injected upstream of the DSI will not meet the MATS removal requirements. Additionally, the additional dust loading from the DSI could increase PM emissions to the ESP which would make the unit unable to comply with the MATS 0.03 lb/MMBtu PM limits.

**Request 38d.** Did Burns & McDonnell or EKPC consider switching to an alternative type of coal, with different emission properties, as a compliance option?

**Responses 38d.** No. Neither Burns & McDonnell nor EKPC considered switching to an alternative type of coal, with different emission properties, as a compliance option.

**Request 38d(i).** If so, please provide analyses and workpapers (in electronic, machine-readable format) related to the consideration of coal switching as a compliance option.

**Responses 38d(i).** Not applicable.

**Request 38d(ii).** If not, why not?

**Responses 38d(ii).** EKPC has no immediate plans to switch fuels. The control options chosen for this project would be expected to accommodate a wide range of fuel types which gives EKPC fuel flexibility.

**Supplemental Response to Response 38c(ii) – Responsible Party: Block Andrews**

**Response 38c(ii)** The third sentence in the original response should read “Hydrated lime injection upstream of the ESP will not meet the MATS removal requirements.”

**EAST KENTUCKY POWER COOPERATIVE, INC.  
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**INTERVENORS' INITIAL REQUEST FOR INFORMATION DATED 10/04/13  
REQUEST 40**

**RESPONSIBLE PARTY:           Block Andrews**

**Request 40.**           Refer to the Direct Testimony of Block Andrews, page 12, lines 8 through 20:

- a.       Please provide any and all analyses and workpapers (in electronic, machine-readable format) related to the cost estimations and assumptions.
- b.       Please provide all documents and workpapers (in electronic, machine-readable format) related to “equipment costs based on budgetary proposals.”

**Responses 40a-b.**    Please see the Application, Exhibit 9, the Direct Testimony of Block Andrews, Exhibit BA-1, pages 37 through 40 of 43 for a breakdown of the estimated costs for this project. All documents, analyses, and workpapers supporting the estimated costs are not in the possession of EKPC but are proprietary information in the possession of Burns & McDonnell. Due to the competitively sensitive and proprietary nature of these materials, as well as the overly broad nature of the request, EKPC objects to the request.

**Supplemental Response to Response 40a-b – Responsible Party: Block Andrews**

**Response 40a-b.**    Please see the attached PDF file, which contains the details of the cost estimate that was performed for the project. All assumptions that were made in creating the cost

estimate were described in Exhibit BA-1 of the Andrews Direct Testimony filed with the Application in this proceeding. The entirety of this supplemental response is included on the CD filed under seal and subject to confidential treatment.

**EAST KENTUCKY POWER COOPERATIVE, INC.  
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**INTERVENORS' INITIAL REQUEST FOR INFORMATION DATED 10/04/13  
REQUEST 41**

**RESPONSIBLE PARTY:           Block Andrews**

**Request 41.**           Refer to the Direct Testimony of Block Andrews, page 13, line 1. Please provide the analyses and workpapers (in electronic, machine-readable format) related to the estimated increase of \$4.45/MWh in variable O&M costs associated with the Project.

**Response 41.**           The O&M costs are described on page 37 of 43 of my initial testimony. Calculations are based on Engineer's proprietary data.

**Supplemental Response to Response 41. – Responsible Party: Block Andrews**

**Response 41.**           Please see the attached Excel file, which is the spreadsheet that supports the O&M costs as disclosed on page 40 of 43 in Exhibit BA-1 of the Andrews Direct Testimony. The waste disposal and lime costs included in the spreadsheet were provided by EKPC and are based on the current costs being experienced at Cooper Unit 2. The labor cost was also provided by EKPC, but was not utilized in the calculations included with this spreadsheet.