

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

**In the Matter of:**

<b>INVESTIGATION OF KENTUCKY UTILITIES</b>	)	
<b>COMPANY'S AND LOUISVILLE GAS AND</b>	)	<b>CASE NO. 2015-00194</b>
<b>ELECTRIC COMPANY'S RESPECTIVE NEED</b>	)	
<b>FOR AND COST OF MULTIPHASE</b>	)	
<b>LANDFILLS AT THE TRIMBLE COUNTY</b>	)	
<b>AND GHENT GENERATING STATIONS</b>	)	

**TESTIMONY OF**  
**JOHN N. VOYLES, JR.**  
**VICE PRESIDENT, TRANSMISSION AND GENERATION SERVICES**  
**KENTUCKY UTILITIES COMPANY AND**  
**LOUISVILLE GAS AND ELECTRIC COMPANY**

**Filed: August 6, 2015**

1 **Q. Please state your name, position and business address.**

2 A. My name is John N. Voyles, Jr. I am the Vice President of Transmission and  
3 Generation Services for Kentucky Utilities Company (“KU”) and Louisville Gas and  
4 Electric Company (“LG&E”) and I am an employee of LG&E and KU Services  
5 Company, which provides services to LG&E and KU (collectively “the Companies”).  
6 My business address is 220 West Main Street, Louisville, Kentucky, 40202. A  
7 complete statement of my education and work experience is attached to this testimony  
8 as Appendix A.

9 **Q. Have you previously testified before this Commission?**

10 A. Yes. I testified in Case No. 2011-00375, *In re the Matter of: Joint Application of*  
11 *Louisville Gas and Electric Company and Kentucky Utilities Company for a*  
12 *Certificate of Public Convenience and Necessity and Site Compatibility Certificate*  
13 *for the Construction of a Combined Cycle Combustion Turbine at the Cane Run*  
14 *Generating Station and the Purchase of Existing Simple Cycle Combustion Turbine*  
15 *Facilities from Bluegrass Generation Company, LLC in LaGrange, Kentucky.* I  
16 testified in the Companies’ 2009 environmental compliance plan cases (Case Nos.  
17 2009-00197 (KU 2009 ECR Plan) and 2009-00198 (LG&E 2009 ECR Plan), and I  
18 also testified in the Companies’ recent environmental surcharge cases, Case Nos.  
19 2011-00161 (KU) and 2011-00162 (LG&E).

20 **Q. What is the purpose of your testimony?**

21 A. My testimony will explain the Companies’ consideration, and appropriate rejection,  
22 of Sterling Ventures, LLC’s (“Sterling Ventures”) offers to provide a storage  
23 alternative to the Ghent and Trimble County landfills for the disposal of coal  
24 combustion residuals (“CCR”). In so doing, I will: (1) reiterate that the landfills

1 approved in the KU 2009 ECR Plan and LG&E 2009 ECR Plan for the Ghent and  
2 Trimble County stations remain the least cost disposal options; (2) explain how the  
3 Companies have kept the Commission apprised of the status of the Ghent and  
4 Trimble County landfill projects; (3) demonstrate that the Companies analyzed  
5 Sterling Ventures' offers regarding disposal alternatives and found that such options  
6 were not least cost and pose significant operational risks; (4) explain the  
7 insufficiencies with Sterling Ventures' offers with respect to the costs of complying  
8 with the United States Environmental Protection Agency's ("EPA") Final Rule for  
9 Disposal of Coal Combustion Residuals from Electric Utilities ("CCR Rule"); (5) set  
10 forth the redundancy in facilities and equipment that would be required if the  
11 Companies pursued one of Sterling Ventures' offers; and (6) conclude with an  
12 overview of the Companies' long history of entering into economical beneficial reuse  
13 opportunities for its CCR.

14 **Q. Please provide a summary of the Companies' other witnesses who are filing**  
15 **direct testimony.**

16 A. In addition to me, the following persons are filing direct testimony on behalf of the  
17 Companies.

- 18 • **Gary H. Revlett:** His testimony describes the CCR Rule, and explains  
19 the portions that impact Sterling Ventures' proposals and complaint in  
20 this matter.
- 21 • **David S. Sinclair:** His testimony refutes Sterling Ventures' assertions  
22 that it would be economical to store any or all of the CCR produced by  
23 the coal-fired units at the Companies' Ghent and Trimble County

1                                   Generating Stations as compared to storing the same CCR at landfills  
2                                   at the stations.

- 3                                   • **Robert M. Conroy:** His testimony explains the Commission’s  
4                                   approval of projects required to meet environmental compliance  
5                                   requirements under KRS 278.183, and the risks to customers that  
6                                   would result if Sterling Ventures’ mine were the sole disposal site for  
7                                   coal CCR.

8                                   **Overview of the Ghent and Trimble County Landfill Projects**

9   **Q.    Please provide an overview of the Ghent and Trimble County landfill projects**  
10 **that were approved in the KU 2009 ECR Plan and LG&E 2009 ECR Plan.**

11 A.    Among the approved projects in the Companies’ 2009 ECR Plans was a CPCN for  
12 the Ghent Landfill and CCR treatment and transport (“CCRT”) facility, which the  
13 Commission found necessary because the station’s original storage impoundments  
14 were nearing capacity and new capacity was required to continue operation of the  
15 station’s four generating units.<sup>1</sup> The estimated capital cost of Phase I was \$204  
16 million and completion of the project was expected to take 18-24 months.

17                                   Similarly, the Commission approved the CPCN for the construction of the  
18 Trimble County Landfill, which included the necessary CCR treatment and transport  
19 system, leachate collection system, the lined landfill itself, and eventual capping and  
20 closing of the landfill.<sup>2</sup> The landfill was to be located on property owned by the

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<sup>1</sup> *In the Matter of: Application of Kentucky Utilities Company for Certificates of Public Convenience and Necessity and Approval of Its 2009 Compliance Plan for Recovery by Environmental Surcharge* (Case No. 2009-00197) (Ky. PSC Dec. 23, 2009); *In the Matter of: Louisville Gas and Electric Company for a Certificate of Public Convenience and Necessity and Approval of Its 2009 Compliance Plan for Recovery by Environmental Surcharge* (Case No. 2009-00197) (Ky. PSC Dec. 23, 2009).

<sup>2</sup> *Id.*

1 Companies (at the head of what the Companies called Ravine B), and was to have a  
2 storage capacity of 34.5 million cubic yards (“MCY”). The Companies proposed to  
3 construct the landfill in phases similar to the Ghent and E.W. Brown Landfill  
4 projects; the Companies’ share of the total estimated capital cost for entire landfill  
5 was estimated to be \$404.3 million, of which the Companies estimated they would  
6 expend \$70.5 million to build Phase I. The Companies estimated that Phase I of the  
7 landfill would be complete in 2012, with the Companies’ share of the landfill’s  
8 estimated operation and maintenance (“O&M”) costs to be a total of \$15.3 million for  
9 2013-2018.

10 **Q. Did the Companies consider alternatives to the Ghent and Trimble County**  
11 **Landfills in developing the 2009 ECR Plans?**

12 A. Certainly. With respect to the Ghent Landfill, the Companies initially identified forty-  
13 two potential alternatives based on combinations of variables including storage and  
14 CCR transport methods, site locations, and transmission line relocation needs.<sup>3</sup> From  
15 this initial evaluation, five storage alternatives were developed, along with scope of  
16 work estimates and net present value evaluations for these alternatives.<sup>4</sup>  
17 Opportunities for beneficial reuse were also evaluated.<sup>5</sup>

18 In regards to the Trimble County Landfill, the Companies identified twenty-  
19 six potential CCR storage alternatives on existing Trimble County station property  
20 and the area surrounding the ravines.<sup>6</sup> These alternatives included off-site,

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<sup>3</sup> *In the Matter of: Application of Kentucky Utilities Company for Certificates of Public Convenience and Necessity and Approval of Its 2009 Compliance Plan for Recovery by Environmental Surcharge* (Case No. 2009-00197), John N. Voyles Direct Testimony at 26-27.

<sup>4</sup> *Id.*

<sup>5</sup> *Id.*

<sup>6</sup> *Id.* at 32.

1 commercially owned options.<sup>7</sup> The cost of trucking CCR to an existing offsite  
2 commercial landfill was almost two times the cost of the proposed landfill. Of the  
3 twenty-six potential alternatives, nine landfill scenarios were evaluated during this  
4 feasibility study.<sup>8</sup> From these, three storage alternatives for scope of work estimates  
5 and net present value evaluations were developed.<sup>9</sup>

6 After the Companies thoroughly considered these numerous alternatives, the  
7 Companies determined, and the Commission agreed, that the Ghent and Trimble  
8 County Landfills were the least cost, most feasible option to properly dispose of  
9 CCR.<sup>10</sup>

10 **Q. After the CPCN was granted, did the Companies proceed with the Ghent**  
11 **Landfill project?**

12 A. Yes. After receiving authority from the Commission, the Companies performed the  
13 necessary engineering and permitting, which culminated in the successful completion  
14 of Phase I of the Ghent Landfill in December 2014. The Ghent Landfill has proven to  
15 be a suitable site for the disposal of CCR and will provide critical storage for future  
16 decades as additional phases are required, approved for cost recovery, and developed.  
17 The experience the Companies have gained through this project has been useful in the  
18 current design and permitting for the landfill and CCRT at Trimble County and will  
19 continue to be useful as it nears construction and operation.

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<sup>7</sup> Coal Combustion Byproduct Plan for Trimble County Station, page 11 of 46, which was filed as part of the Companies' application in the 2009 ECR Plan cases.

<sup>8</sup> *Id.*

<sup>9</sup> *Id.*

<sup>10</sup> *In the Matter of: Application of Kentucky Utilities Company for Certificates of Public Convenience and Necessity and Approval of Its 2009 Compliance Plan for Recovery by Environmental Surcharge* (Case No. 2009-00197) (Ky. PSC Dec. 23, 2009); *In the Matter of: Louisville Gas and Electric Company for a Certificate of Public Convenience and Necessity and Approval of Its 2009 Compliance Plan for Recovery by Environmental Surcharge* (Case No. 2009-00197) (Ky. PSC Dec. 23, 2009).

1 **Q. After the CPCN was granted, did the Companies proceed with the Trimble**  
2 **County Landfill project?**

3 A. Yes. After the Commission granted a CPCN for the Trimble County Landfill, the  
4 Companies engaged in engineering and permitting efforts. As was the case with  
5 Ghent, the Companies have sought (or are preparing to seek) seven different permits  
6 from four regulatory agencies: the U.S. Army Corps of Engineers, the Kentucky  
7 Division of Waste Management, the Kentucky Division of Water and the Kentucky  
8 Division for Air Quality. In addition, the design for the Trimble County Landfill  
9 includes construction of a bridge to safely facilitate crossing State Highway 1848,  
10 requiring a permit from the Kentucky Transportation Cabinet. The Companies have  
11 received or expect to receive all the permits by early 2016, with the exception of a  
12 revised Title V Air Permit from the Kentucky Division for Air Quality, which the  
13 Companies will not need in order to construct the landfill, but which the Companies  
14 will need to operate the landfill before it goes into service in 2018.

15 **Updates Provided to the Commission**

16 **Q. Did the Companies keep the Commission apprised of the progress with the**  
17 **Ghent and Trimble County Landfills?**

18 A. Certainly. The Companies met with the Commission three times to discuss the status  
19 of the projects approved in the 2009 ECR Plans, which included the Ghent and  
20 Trimble County Landfill projects. The first meeting occurred on November 4, 2010,  
21 during which the Companies explained that the expected cost of Phase I of the Ghent  
22 Landfill had increased by \$98 million, which was primarily due to the requirements

1 of the CCRT facility.<sup>11</sup> The Companies further explained that the projected design  
2 was expected to be compliant with pending regulations and remained the least cost  
3 option for CCR storage.<sup>12</sup> At the same meeting, the Companies likewise provided an  
4 update on the Trimble County Landfill. Similar to the Ghent Landfill, the estimated  
5 cost of Phase I had increased by \$56 million due the required treatment and transport  
6 system.<sup>13</sup> As with Ghent, the Landfill was designed to comply with pending  
7 regulations and remained the least cost option.<sup>14</sup>

8 The Companies provided a second update to the Commission on June 14,  
9 2013.<sup>15</sup> In regards to the Ghent Landfill, the Companies explained that the project  
10 was significantly progressing on the landfill itself, as well as the CCRT facility.<sup>16</sup>  
11 The estimated costs were unchanged from the November 4, 2010 meeting with the  
12 Commission.<sup>17</sup> With respect to the Trimble County Landfill, the Companies  
13 explained there had been permitting difficulties because the Kentucky Division of  
14 Waste Management determined that a karst feature, which was located within the  
15 footprint of the landfill design, was subject to protection under the Kentucky Cave  
16 Protection Act as a cave due to the presence of certain organisms within it. This led  
17 to the denial of the initial permit application. <sup>18</sup> The Companies, at that point in  
18 2013, were evaluating an alternative location to avoid the cave while obtaining the

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<sup>11</sup>In the Matter of: Verified Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for Declaratory Order Concerning Construction of the Trimble County Landfill and Related Cost Recovery (Case No. 2015-00156) Verified Joint Application at Exhibit 4, page 11.

<sup>12</sup> *Id.*

<sup>13</sup> *Id.* at 9.

<sup>14</sup> *Id.*

<sup>15</sup> *Id.* at 46-77.

<sup>16</sup> *Id.* at 49.

<sup>17</sup> *Id.*

<sup>18</sup> *Id.* at 30.

1 same storage capacity as originally filed in the Companies' 2009 ECR Plans, all while  
2 minimizing costs and complying with environmental regulations.<sup>19</sup>

3 The Companies conducted a third meeting at the Commission on February 5,  
4 2015.<sup>20</sup> While the Companies provided a photograph of the constructed Ghent CCRT  
5 facility that was completed in December 2014,<sup>21</sup> most of the presentation, however,  
6 focused on the status of the Trimble County Landfill. The Companies stressed that  
7 the long-term CCR needs had not changed from the Companies' 2009 ECR Plans and  
8 constructing the treatment facility and an on-site landfill remained the least-cost  
9 option.<sup>22</sup> As part of the presentation, the Companies updated their least cost analysis,  
10 and compared the cost of an onsite landfill to an offsite landfill under a number of  
11 generation and reuse scenarios.<sup>23</sup> The Companies utilized Sterling Ventures' cost  
12 information received in October 2014 to perform this analysis, which showed that an  
13 onsite landfill ranged from \$156 to \$217 million lower from a PVRR perspective as  
14 compared to an offsite option such as disposal in Sterling Ventures' mine.<sup>24</sup> In none  
15 of the scenarios – which considered ranges of generation and beneficial reuse – was  
16 an offsite landfill preferable under a PVRR analysis.<sup>25</sup>

17 While permitting efforts delayed the construction of the landfill from the  
18 initial plan, all studies and analyses supported the location of the alternate onsite  
19 landfill and the Companies were moving forward fully with the project by performing

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<sup>19</sup> *Id.* at 32.

<sup>20</sup> *Id.* at 53-84.

<sup>21</sup> *Id.* at 85.

<sup>22</sup> *Id.* at 55.

<sup>23</sup> *Id.* at 68.

<sup>24</sup> *Id.* This analysis was based on the total cost of the projects; not the Companies' 75% share.

<sup>25</sup> *Id.* The formal report of this analysis was provided to the Commission at the June 19, 2015 Informal Conference in this case, was produced again in response the Companies' response to Commission Staff's Data Request No. 4, and is further discussed in the testimony of Mr. Sinclair.

1 engineering and environmental studies necessary for permitting and have purchased  
2 250 acres of land around the perimeter of the landfill site for soil borrow and buffer.  
3 In addition, construction of the Bottom Ash Pond dike extension, the Gypsum Storage  
4 Pond and constructing and placing in operation a new fly ash barge loading system to  
5 allow for greater beneficial reuse opportunities served to mitigate risks from  
6 permitting delays. The Companies explained that the total capital cost estimate for all  
7 phases had increased \$41.1 million from the November 4, 2010 update.

8 **Q. Have the Companies been responding to changes in the regulation of CCR**  
9 **during the development of the Ghent and Trimble County Landfills?**

10 A. Absolutely. In December 2008, shortly before the Companies filed their 2009 ECR  
11 Plans, a coal ash slurry spill occurred from a dike rupture at an ash containment area  
12 at the Tennessee Valley Authority's Kingston Fossil Plant. Almost 5.4 million cubic  
13 yards of coal ash poured into a nearby waterway through a breach in a retention pond.  
14 This spill prompted the EPA to assess coal ash surface impoundments and gather  
15 information from facilities managing coal ash nationwide. On June 21, 2010, the  
16 EPA proposed regulations to address the risks from the disposal of CCR in wet  
17 impoundments and dry landfills generated from the combustion of coal at electric  
18 utilities. The Companies evaluated the proposed regulations very thoroughly to  
19 ensure the Ghent and Trimble County Landfills would be compliant. The final CCR  
20 Rule was signed by the EPA's administrator on December 19, 2014, and was  
21 published in the Federal Register on April 17, 2015; the rule will become effective in  
22 October 2015. Throughout the development of the Ghent and Trimble County  
23 Landfills, the Companies have had to consider the ongoing uncertainty associated

1 with the stringent environmental regulations pertaining to the beneficial use, storage  
2 and disposal of CCR.

3 **Q. Did the EPA rulemaking on CCR during this time have other impacts on the**  
4 **Companies' business decisions?**

5 A. Yes. Given the likelihood that the regulation of CCR would increase, the Companies  
6 were mindful in making decisions on opportunities for the beneficial reuse of CCR  
7 materials, realizing that such decisions could be affected by the changes in the  
8 environmental regulation, including the potential that many beneficial reuse  
9 opportunities would no longer be available under the final CCR Rule.

10 **Q. Does the EPA's CCR regulation expose the Companies to any new risks?**

11 A. Yes, as discussed further in the testimony of Gary H. Revlett, the self-implementing  
12 aspect of the CCR regulation in lieu of a permit-based regime creates new and  
13 significant potential risk brought by the potential for citizen suits under the Rule.  
14 Application of any environmental regulation to the specifics of any site inevitably  
15 requires interpretative judgment. The self-implementation aspect of the CCR Rule  
16 leaves the final compliance decision to the outcome of litigation in federal courts if an  
17 enforcement case is initiated by a third party through a citizen suit as authorized by  
18 the CCR Rule. And, as a result of the self-implementation, neither Kentucky nor the  
19 EPA is authorized to issue permits to ensure compliance with the new federal  
20 standards. As a result, our judgments on the appropriateness of any new facilities  
21 must reflect these additional risks of environmental regulation.

22 **The Companies' Interactions with Sterling Ventures**

23 **Q. Did Sterling Ventures contact the Companies with offers regarding the disposal**  
24 **of CCR and the purchase of limestone?**

1 A. Yes, they did. As my testimony will explain, the Companies considered Sterling  
2 Ventures' various offers against the backdrop of uncertainty regarding changing EPA  
3 regulations, permitting challenges, and the overarching need to dispose of CCR in an  
4 environmentally sound and economically efficient manner over several years.  
5 Sterling Ventures' first offer to the Companies regarding CCR disposal was with  
6 respect to Ghent in July 2010.<sup>26</sup> Under that offer, Sterling Ventures would handle an  
7 initial 1.5 million tons of gypsum and also receive Ghent's excess gypsum resulting  
8 from operation of the flue gas desulfurization ("FGD") units for the life of the plant.  
9 The offer also expressed interest in selling limestone to the Companies for use in their  
10 scrubbers.

11 **Q. Would this proposal have eliminated the need for the Ghent Landfill and**  
12 **CCRT?**

13 A. No, because the offer pertained solely to gypsum, which is only one of three types of  
14 CCR created by the coal combustion process. Under Sterling Ventures' offer, the  
15 Ghent Landfill would still have been necessary to store fly ash and bottom ash, the  
16 other two types of CCR. Because this offer was not economical, the Companies  
17 continued to exercise their authority under the CPCN.

18 **Q. Did Sterling Ventures submit a revised cost offer to the Companies with respect**  
19 **to the Ghent Landfill?**

20 A. Yes, they did in September 2011. Sterling Ventures again offered to handle an initial  
21 1.5 million tons of gypsum and receive excess FGD gypsum. The offer also  
22 mentioned the possibility of the Companies purchasing limestone from Sterling

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<sup>26</sup> Prior to contacting the Companies about possibly removing CCR from Ghent, Sterling Ventures submitted unsuccessful bids to supply limestone to Ghent in 2004 and 2008.

1 Ventures, as well as whether Sterling Ventures' underground limestone mine in  
2 Jessamine County could receive CCR from the E.W. Brown plant. The Companies  
3 explained that while the proposal may have merit for deferring the next phase of the  
4 Ghent Landfill, that phase was several years away. In January 2012, Sterling  
5 Ventures updated its offer and reduced the cost to store gypsum from Ghent in  
6 Sterling Ventures' limestone mine and increased the cost of limestone delivered to  
7 Ghent. As explained in the testimony of David S. Sinclair, the change in the disposal  
8 fee was insignificant as compared to the difference in the cost per cubic yard. On  
9 March 7, 2012 the Companies met with Sterling Ventures' representatives to discuss  
10 their conceptual offer and agreed to evaluate the information discussed at that  
11 meeting. After reviewing the conceptual offer that was made without specific terms  
12 or securities, and considering the PVRR (as discussed in the testimony of Mr.  
13 Sinclair), on March 29, 2012, the Companies advised Sterling Ventures the offer was  
14 not cost competitive and they were rejecting their offer. The Companies' analysis  
15 showed that Sterling Ventures' cost to transport and store gypsum was \$93 million  
16 unfavorable to the landfill alternative.

17 **Q. Did Sterling Ventures later make an offer to sell limestone to the Companies?**

18 A. Yes, in response to a request for proposals for limestone. Sterling Ventures submitted  
19 a bid to supply limestone to the Companies on February 19, 2013. Although the  
20 request for proposals only sought bids for limestone, Sterling Ventures' bid combined  
21 the limestone supply component with offers to (1) backhaul gypsum from Ghent to  
22 Sterling Ventures and (2) haul gypsum from Trimble County to Ghent. The bid  
23 stated that the limestone and gypsum backhaul prices "cannot stand alone" and that  
24 pricing depended on Sterling Ventures' ability to "hot-seat [its] trucks" by "operating

1 20 hours a day, 5 days a week.”<sup>27</sup> In other words, Sterling Ventures’ tied the sale of  
2 limestone to the Companies agreeing to their proposals regarding gypsum. Because  
3 the quoted price for limestone was higher than other offers the Companies received,  
4 and due to Sterling Ventures tying the limestone price to the uneconomical gypsum  
5 backhauling proposal, the Companies did not select Sterling Ventures as a limestone  
6 supplier.

7 **Q. Did Sterling Ventures make any subsequent offers to the Companies with**  
8 **respect to CCR at Ghent or Trimble County?**

9 A. No, they did not. In August 2014, the Companies became aware that the EPA, in  
10 connection with reviewing the Companies’ Clean Water Act Section 404 Permit  
11 application filed, sent the U.S. Army Corps of Engineers a letter stating that the  
12 Alternatives Analysis, which addresses environmental impacts as well as other  
13 practicability issues, should consider whether Sterling Ventures’ underground  
14 limestone mine in Gallatin County, Kentucky or the Lee’s Bottom site in Indiana  
15 could serve as an alternative storage option for the CCR produced at Trimble County  
16 as the “least environmentally damaging practicable alternative.”<sup>28</sup> Subsequently, the  
17 Companies and Sterling Ventures began discussing the feasibility of this option. It  
18 must be noted that at that time Sterling Ventures had – and in fact still has –only a  
19 Kentucky state permit to take gypsum from Ghent and place it only in the first level  
20 of its limestone mine, and has not applied for or received a permit from the state for  
21 any type of disposal of CCR from the Trimble County Generation Station. Moreover,

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<sup>27</sup> This letter was sent by the President of Sterling Ventures to Mr. W.G. Gilbert, Jr., Senior Fuels and Transportation Administrator for the Companies on February 19, 2013.

<sup>28</sup> 40 C.F.R. Section 230.10.

1 the Companies remained acutely aware that disposal at the Sterling Ventures mine  
2 would likely be regulated under the then-pending proposed CCR Rule.

3 In connection with these discussions and to respond to the EPA’s questions,  
4 the Companies requested twelve items of preliminary information from Sterling  
5 Ventures. Sterling Ventures did not answer the questions fully; including refusing to  
6 provide audited financial information despite the fact that the Companies would be  
7 undertaking a significant operational and business risk by contractually being  
8 inextricably tied to a third party for the operation of the Ghent and Trimble County  
9 stations for decades. The Supplement to the Alternatives Analysis showed that  
10 neither of the sites identified in the EPA letter had barge unloading facilities capable  
11 of handling CCR materials or permitted or developed sites for the disposal of CCR.  
12 The Companies developed a “conceptual” cost estimate to both alternatives based on  
13 its experience with these types of facilities. Combined with serious feasibility  
14 concerns, the significant outlay of capital construction expenditures, and  
15 environmental risks – each of which are discussed more fully below – the Companies,  
16 in connection with GAI Consulting, Inc., determined that the Trimble County Landfill  
17 remained the “least environmentally damaging practicable alternative.”<sup>29</sup>

18 In addition, as discussed in the testimony of Mr. Sinclair, the Companies also  
19 evaluated Sterling Ventures’ information from a PVRR perspective and concluded the  
20 Trimble County Landfill Phase I facility remained the least cost, most feasible  
21 alternative.

22 **Q. Did Sterling Ventures contact the Companies about the availability of a barge**  
23 **site near the Trimble County Generating Station?**

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<sup>29</sup> *Id.*

1 A. In December 2014, Sterling Ventures contacted the Companies and told them they  
2 had learned that a barge unloading site near its mine may be available. Sterling  
3 Ventures explained that the site did not have *any* of the in-river infrastructure in  
4 place, and the owners' permit (the owner is a third party; not Sterling Ventures)  
5 would have to be modified, which Sterling Ventures claimed would take six months.  
6 The Companies then looked into the issue internally, and realized the barge site,  
7 which is ten miles from the mine, was essentially a ramp on a small parcel occupied  
8 by a large building. To accommodate use of this site would require significant  
9 investment to enable it to function as a high-capacity barge unloading and truck  
10 loading site, similar to that used in the Alternatives Analysis for the Sterling Ventures  
11 option. The site is part of the of Warsaw community and also near Gallatin schools.  
12 Certainly, the Companies believe this would likely add environmental and safety risk  
13 and make the option less feasible as an alternative and could restrict the times that  
14 trucking substantial amounts of CCR would be allowed. As a result, the existence of  
15 the Warsaw facility did not change the Companies' determination that the onsite  
16 landfill remained the most feasible, least cost option.

17 **Q. To be clear, Sterling Ventures did not submit a proposal with respect to CCR  
18 disposal at Trimble County after the EPA' inquiry?**

19 A. No, it did not. The next step that occurred was the Companies submitting  
20 supplementary information to the U.S. Army Corps of Engineers in December 2014  
21 in response to the EPA's inquiry that showed that Sterling Ventures' underground  
22 mine was not a "least environmentally damaging practicable alternative" to the onsite

1 landfill.<sup>30</sup> On February 12, 2015, the EPA responded that the supplementary  
2 information was responsive to its concerns.<sup>31</sup> On May 20, 2015, Sterling Ventures  
3 tendered a complaint against the Companies at the Public Service Commission. The  
4 Complaint makes a number of unfair and erroneous allegations about the Companies’  
5 unwillingness to enter into an agreement with Sterling Ventures’ with regard to  
6 Trimble County, but these arguments are misleading. There was no proposal for the  
7 Companies to accept, as Sterling Ventures has provided merely conceptual offers  
8 coupled with a history of noneconomic price proposals for backhauling Ghent CCR.

9 **Q. Do you have a response to paragraphs 7-10, 18-19, 21-56, and 59-60 of Sterling**  
10 **Ventures’ Complaint?**

11 A. To the extent those paragraphs contain material allegations at issue in this matter,  
12 those material allegations are addressed in my testimony or in the testimony of other  
13 of the Companies’ witnesses. It must be noted, however, there are numerous factual  
14 errors and mischaracterizations in the Complaint. In paragraph 32 of the Complaint,  
15 Sterling Ventures claims that the Companies met with the EPA and U.S. Army Corps  
16 of Engineers to discuss the Alternatives Analysis in the Clean Water Act 404 Permit  
17 in May 2011. This is wrong; this meeting occurred on June 13, 2012.

18 In paragraphs 32-33, Sterling Ventures also takes issue with the Companies’  
19 failure to include its underground limestone mine in an Alternatives Analysis to the  
20 revised Clean Water Act 404 Permit application filed March 16, 2012, even though  
21 the Analysis was filed six months after Sterling Ventures’ offer. As explained above,

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<sup>30</sup> 40 C.F.R. Section 230.10(a).

<sup>31</sup> This letter, which was not disclosed in Sterling Ventures’ tendered complaint, was discussed on Slide 4 of the Companies’ presentation to the Commission at the Informal Conference on June 19, 2015. A copy of the letter was also provided at that time. A copy is also attached to my testimony as Exhibit JNV-1.

1 the 2011 offer pertained to the backhauling of gypsum from *Ghent*, not Trimble  
2 County. Moreover, while the offer mentioned a theoretical arrangement involving an  
3 underground limestone mine in *Jessamine County* (not Gallatin County), it was for  
4 CCR from the *E.W. Brown Station*, not Trimble County. In fact, Trimble County was  
5 not even mentioned.

6 Also, this March 2012 Alternatives Analysis revision was not the result of the  
7 meeting with the EPA and U.S. Army Corps of Engineers as Sterling Ventures'  
8 complaint wrongly claims, but rather to revise the stream, wetland, and pond  
9 delineations. Sterling Ventures also wrongly claims that the Companies filed another  
10 revised Clean Water Act 404 Permit application in January 2014; this actually  
11 occurred months later on April 25, 2014. These errors, which relate closely to the  
12 mischaracterized account of the events that have occurred, are significant.

13 **Q. Is Sterling Ventures correct that the Companies abandoned the PVRR analysis**  
14 **in its supplemental Alternatives Analysis filing for its Clean Water Act Section**  
15 **404 Permit application?**

16 A. Absolutely not. This argument is based on a fundamental misunderstanding of the  
17 disparate points of emphasis between the Kentucky Public Service Commission and  
18 the U.S. Army Corps of Engineers with respect to CCR storage. When the  
19 Commission considered and ultimately granted CPCNs to the Companies for the  
20 Ghent and Trimble County Landfills, one of the Commission's preeminent  
21 considerations was whether the landfills were the least cost feasible solution. The  
22 Companies demonstrated the landfills were least cost by showing the PVRR for the  
23 projects as compared to the numerous alternatives that were considered.

1           The Alternatives Analysis required as part of a Clean Water Act Section 404  
2 Permit application, however, must demonstrate that, among other things, the proposed  
3 project is the least environmentally damaging practicable alternative (“LEDPA”) to  
4 achieve the project’s purpose. 40 C.F.R. Section 230.10(a) is the basis for the  
5 LEDPA determination. It states that, absent exceptions that do not apply in this  
6 matter, a Section 404 Permit will not be issued “if there is a practicable alternative to  
7 the proposed discharge which would have less adverse impact on the aquatic  
8 ecosystem, so long as the alternative does not have other significant adverse  
9 environmental consequences.” The LEDPA analysis therefore involves two separate  
10 determinations; in order to qualify as the LEDPA, an alternative must be both  
11 practicable and the least environmentally damaging. Costs are treated differently in a  
12 LEDPA analysis than in a CPCN proceeding. While cost is a primary focus of a  
13 CPCN proceeding, cost is only one factor in determining whether an alternative is  
14 practicable for purposes of the LEDPA analysis. The Companies concluded that the  
15 Sterling Ventures alternative was not practicable on grounds other than cost.  
16 However, the Companies’ supplement to its Alternatives Analysis also contained a  
17 detailed comparison of the costs of the onsite landfill and the Sterling Ventures’ mine  
18 alternative that showed that Sterling Ventures’ cost per cubic yard (factoring in  
19 capital and O&M costs) was \$19.71, as compared to the onsite landfill cost of \$11.72.

20           The Companies must therefore demonstrate to the Commission that, among  
21 other things, the Ghent and Trimble County Landfills are the least cost feasible  
22 storage option, while also demonstrating to the U.S. Army Corps of Engineers that  
23 the Trimble County Landfill satisfies the LEDPA determination. In combing through  
24 the Companies’ Clean Water Act Section 404 Permit application filings and focusing

1 on sentences regarding the LEDPA outcome, Sterling Ventures is trying to conflate  
2 regulatory agencies and standards that rightfully operate independently of one  
3 another, with each focused on executing their important statutory directives. The  
4 Companies believe it continues to satisfy the requisite standards for both entities, as  
5 the Commission granted the CPCNs for Ghent and Trimble County Landfills, the  
6 U.S. Army Corps of Engineers issued the Ghent 404 permit on October 25, 2011, and  
7 in February 2015 the EPA informed the U.S. Army Corps of Engineers in a letter (a  
8 copy was provided to the Commission on June 19, 2015 and is attached as Exhibit  
9 JNV-1 to my testimony) that the Companies' supplementary information that  
10 analyzed Sterling Ventures' limestone mine was "generally responsive" to the EPA's  
11 comment letters regarding the Alternatives Analysis.

12 **Sterling Ventures' Deficiencies Regarding the CCR Rule**

13 **Q. In addition to the PVRR calculations that Mr. Sinclair's testimony discusses, are**  
14 **there obvious deficiencies with the storage plan set forth in Sterling Ventures'**  
15 **Complaint with respect to the Ghent and Trimble County CCR?**

16 **A.** Yes, there are; these deficiencies have been apparent in Sterling Ventures' prior  
17 offers, as well. First, Sterling Ventures' offers for Ghent's and Trimble County's  
18 CCR do not appear to include any costs associated with complying with the CCR  
19 Rule. This is because Sterling Ventures claims that storing the CCR in its  
20 underground limestone mine in Gallatin County will constitute beneficial use, instead  
21 of storage that constitutes a landfill, thereby exempting Sterling Ventures from  
22 compliance with the Rule. As explained in the testimony of Mr. Revlett, if the  
23 underground mine is treated as a CCR landfill, as Mr. Revlett believes it will be,  
24 Sterling Ventures would have to comply with all of the CCR Rule requirements

1 related to the disposal of CCR, including proper management of above-ground  
2 facilities handling or short-term storage of CCR, landfill lining, landfill design, and  
3 operating requirements. Failing to even consider CCR Rule compliance costs renders  
4 Sterling Ventures' offers with respect to Ghent and Trimble County even more  
5 uneconomical. To this day, Sterling Ventures can provide neither the Companies nor  
6 the Commission with any assurance that its offers will be determined to be beneficial  
7 use under the CCR Rule, instead of regulated as landfill disposal. This is so in part  
8 because under the self-implementing aspect of the CCR Rule, only a federal court can  
9 make this determination in connection with a citizen's suit for a violation of the law.

10 **Q. Did the Companies have to consider the pending CCR Rule when they evaluated**  
11 **Sterling Ventures' offers for Ghent and the information provided for Trimble**  
12 **County?**

13 A. Absolutely. As I explained above, the Kingston spill had occurred only months  
14 before the Companies filed their 2009 ECR Plans. The pending regulations were in  
15 the forefront of the Companies' decision making at all times, as compliance with  
16 federal regulation such that the units can operate is a preeminent concern. When  
17 Sterling Ventures submitted its offers for Ghent, as well as when they provided  
18 information regarding Trimble County, the EPA had not yet issued the final CCR  
19 Rule. The proposed rule, announced in 2010, however, indicated that CCR might be  
20 regulated as hazardous waste, and in any event, would likely be regulated under  
21 landfill design and operating standards when disposed in large quantities on land.  
22 The Companies expressed concern by speaking at a public EPA meeting about the  
23 proposed rule, its effect on beneficial reuse applications and the treatment, as well as  
24 through formal comments sent to the EPA. Despite this backdrop of pending

1 regulation, Sterling Ventures did not take these standards into account. The  
2 Companies, however, when considering at least a forty year disposal solution,  
3 certainly had to do so.

4 **Q. Please explain how an arrangement with Sterling Ventures could expose the**  
5 **Companies to additional risk under the CCR Rule.**

6 A. The CCR Rule is self-implementing, which means the Companies have an obligation  
7 to determine for themselves that all CCR management and disposal activities comply  
8 with the new federal standards and state regulations. Likewise, state authorities  
9 cannot independently make compliance determinations with respect to the new  
10 federal standards and at present, have not adopted equivalent state standards that  
11 would be as stringent as the federal standards. Even if the state adopted such  
12 standards, the federal standards remain enforceable by way of a citizen suit.

13 As a result, the CCR Rule exposes the Companies to the risk of suits by  
14 citizens, environmental groups, and others who could bring litigation at any time  
15 while CCR is being generated and ultimately deposited at some location. The  
16 Companies' risk of such suit is exacerbated when the Companies could be named in a  
17 lawsuit for the CCR over which it has ceded control once it is hauled from their  
18 stations. There is no ability to obtain a permit from the EPA or the state that would  
19 shield an entity such as Sterling Ventures – as well as the Companies – from liability  
20 so long as the permit is adhered to, and there is currently no mechanism for the EPA  
21 or the state to make binding determinations regarding the scope of coverage under the  
22 CCR Final Rule. This risk is more than simply hypothetical; just last month news  
23 outlets reported that environmental groups have filed a legal challenge to Duke  
24 Energy Corp.'s plans to dispose of coal ash into open-pit clay mines. There is every

1 reason to believe that the citizen groups which engaged in the EPA's CCR  
2 rulemaking would view the Sterling Ventures' conceptual notion of the mine as  
3 disposal, not beneficial use.

4 **Q. Are there other CCR Rule compliance concerns under Sterling Ventures'**  
5 **proposals?**

6 A. Yes. Another significant omission from Sterling Ventures with respect to the CCR  
7 Rule is any consideration of temporary CCR storage at either Trimble or Ghent,  
8 which would be necessary if transportation to Sterling Ventures' mine is interrupted  
9 even for a short period, or for temporary storage nearby Sterling Ventures' mine,  
10 which would be necessary if placement of materials in the mine is temporarily  
11 interrupted for any reason, or if the rate of CCR delivery temporarily exceeds Sterling  
12 Ventures' ability to place CCR in its mine. Unquestionably, such temporary storage  
13 will be required given the roughly forty year span of this project and would need to be  
14 designed to be compliant with the CCR Rule. Sterling Ventures, however, includes  
15 no known consideration or costs for this required infrastructure.

16 **Q. If the Companies utilize offsite disposal for its CCR, will significant onsite**  
17 **capital improvements remain necessary?**

18 A. Yes. The CCRT facility is required to treat, dewater and prepare the CCR for  
19 disposal regardless of the site for disposition; meaning that the facility is required if  
20 the CCR is stored in an onsite landfill, or trucked or barged offsite. As an example, a  
21 photograph of the CCRT facility at Ghent was attached to the Companies'

1 Application.<sup>32</sup> Similarly, the preliminary conceptual layout of the Trimble County  
2 CCRT is attached as Exhibit JNV-2. The most expensive component of Phase I for  
3 the Ghent and Trimble County Landfills is the CCRT. At Ghent, the CCRT,  
4 excluding the pipe conveyor, costs \$260.7 million to construct, which is 75% of the  
5 entire cost of Phase I. The anticipated cost of the CCRT, excluding the pipe  
6 conveyor, at Trimble County is \$178.1 million (net), which is nearly 50% based on  
7 the current estimated costs of Phase I.

8 Sterling Ventures incorrectly alleges that had the Companies elected to pursue  
9 Sterling Ventures' offer to store gypsum in 2011,<sup>33</sup> it would have substantially  
10 reduced the cost of Phase I, as the CCRT facility and appropriate backup on-site  
11 storage facilities would have been required regardless if Sterling Ventures received a  
12 portion or all of the Companies' gypsum from Ghent. Also, while the Companies  
13 explained to Sterling Ventures in December 2011 that their offers may have merit in  
14 deferring later phases of the landfills, the cost impact is significantly lessened because  
15 once the first phase of infrastructure is in place, building additional landfill phases is  
16 less costly on a per ton disposed basis.

17 As Mr. Sinclair explains in his testimony, in both the onsite and offsite  
18 alternatives, it is necessary to build a CCR treatment facility to prepare the CCR for  
19 disposal, which is the single largest capital cost item in both alternatives. Also, for  
20 Trimble County, additional CCR barge loading facilities would be required as the

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<sup>32</sup> In the Matter of: Verified Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for Declaratory Order Concerning Construction of the Trimble County Landfill and Related Cost Recovery (Case No. 2015-00156) Verified Joint Application at Exhibit 4, page 85.

<sup>33</sup> Sterling Ventures Complaint at ¶ 26.

1 existing loading facilities for fly ash and gypsum are not adequately sized or could  
2 not be used to comingle CCR for off-site disposal with beneficial reuse streams.

3 **Q. Would significant offsite capital projects be required if the Companies elected to**  
4 **pursue Sterling Ventures’ river unloading location at Warsaw, Kentucky?**

5 A. Yes. As mentioned, if the Companies elected to utilize the Warsaw site as an  
6 unloading facility for CCR, significant investment would be necessary to construct  
7 adequate facilities for unloading CCR materials from barges to trucks that would be  
8 necessary to effectively enable movement of materials from the barge unloading  
9 facility to their mine. The volume of CCR continuously produced at the generating  
10 stations requires rapid loading and unloading of trucks to and from the mine. In their  
11 discovery responses, Sterling Ventures stated that under their assumptions, the  
12 Companies “would be responsible for developing the barge unloading facility,  
13 maintaining barge fleeting services at the dock, and assuming the risk associated with  
14 potential cost variances.”<sup>34</sup>

15 **Redundancy and Feasibility Concerns**

16 **Q. Even setting aside whether the CCR Rule would apply to Sterling Ventures’**  
17 **limestone mine, would the Companies have to construct contingency facilities if**  
18 **they had elected to utilize the Sterling Ventures option?**

19 A. Yes. The costs of the contingency facilities make this option even more  
20 uneconomical. If Sterling Ventures’ limestone mine was the primary CCR storage  
21 site for Ghent and/or Trimble County, prudent utility operation requires the  
22 Companies to have contingency plans in place to address the unavailability of the  
23 mine, or interruptions in transportation (regardless of whether the CCR is transported

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<sup>34</sup> Sterling Ventures’ Response to Item 41(e) of the Companies’ July 2, 2015 Data Request.

1 by truck or barge). While the Companies have incorporated short-term storage into  
2 the CCRT facilities ranging from 3 to 8 days (different times for each CCR stream) to  
3 allow for periodic on-site maintenance needs or operational interruptions, those time  
4 frames would likely be insufficient to accommodate interruption to off-site disposal  
5 options. Absent contingency facilities, which obviously come at a cost, Sterling  
6 Ventures' disposal of CCR must essentially be perfect for nearly forty years, without  
7 a backstop storage alternative in the event of interruption.

8 To be clear, the Companies cannot operate Trimble County's or Ghent's coal  
9 units under the CCR Rule unless the ongoing disposal of CCR is performed in  
10 accordance with the applicable regulations. As such, in turning over the primary  
11 disposal of CCR to Sterling Ventures, the Companies must have short-term on-site  
12 contingency storage that would allow for CCR to be placed in the event of  
13 interruptions in CCR material movement off-site. For example, the Companies  
14 would need to construct one or more storage facilities (the number of which would  
15 depend on whether the CCR was being blended or disposed of separately) that would  
16 hold, at a minimum, three days of storage. A similar storage facility might also be  
17 necessary nearby Sterling Ventures' limestone mine. It cannot be reiterated enough  
18 that this is a forty year project that, even according to the scenario presented by  
19 Sterling Ventures in 2013, would require trucks to haul CCR *20 hours a day, 5 days a*  
20 *week.*<sup>35</sup> In addition to storage for interruptions, under Sterling Ventures' proposed  
21 schedule, temporary storage will be required for periodic equipment maintenance

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<sup>35</sup> This scenario was explained in a letter was sent by the President of Sterling Ventures to Mr. W.G. Gilbert, Jr., Senior Fuels and Transportation Administrator for the Companies on February 19, 2013. In response to the Companies' data request Item No. 40(e)(iii) in this proceeding, Sterling Ventures has proposed operating trucks 10 hours per day.

1 outages, and weekends and holidays as well, as the Ghent and Trimble stations are  
2 designed to operate every day of the year.

3 The Companies must therefore have a plan in place to address storage needs.  
4 Given the high volume, intensive transport schedule Sterling Ventures described,  
5 weekends, holidays, and even minimal interruptions will cause CCR to backup almost  
6 immediately. Sterling Ventures' proposals do not include any costs for temporary  
7 storage, however.

8 **Q. Are there larger operational risks associated with storing CCR at Sterling**  
9 **Ventures' limestone mine beyond temporary storage interruptions?**

10 A. Yes, there are. The basic premise of Sterling Ventures' offers with respect to its  
11 limestone mine is there will be sufficient empty space in the mine for the CCR to be  
12 stored. It is very troubling that Sterling Ventures does not believe it needs space to  
13 store the up to 910,000 cubic yards of CCR that Trimble County may produce  
14 annually. In discovery, Sterling Ventures produced an email it sent to an EPA  
15 employee in which it says that Trimble County's "actual space needs for CCR is not  
16 more than 500,000 cubic yards per year, and possible much less," and that based on  
17 Sterling Ventures' current average production, Sterling Ventures "would be creating  
18 approximately 600,000 cubic yards of space annually for CCR."

19 Sterling Ventures' assessment of the long-term storage needs for Trimble  
20 County CCR is simply wrong. As the Companies explained in their supplementary  
21 Alternatives Analysis submission, it is not reasonable to assume that beneficial reuse  
22 will continue at current levels – or for that matter at any given level – that will reduce  
23 the amount of CCR that must be placed in a disposal site for the next forty years.  
24 Under current conditions, there is simply no assurance of a future market for Trimble

1 County CCR, as the site is relatively remote and must compete with the growing  
2 supply of CCR being produced elsewhere in response to regulatory controls. Even at  
3 present, under existing beneficial reuse contracts, customers are “sold” CCR for the  
4 cost of getting the product into a truck or barge and/or the cost of transport to the end  
5 user.

6 Designing a CCR disposal facility based on assumed beneficial reuse  
7 percentages imposes substantial operational risk if the reuse rate is not achieved. The  
8 Companies must make these design decisions based on realistic expectations of future  
9 CCR production rather than on projected beneficial use or past operational issues on a  
10 new large generating unit.

11 Moreover, Sterling Ventures’ ability to create the required amount of space is  
12 entirely dependent on Sterling Ventures continuing to mine and market limestone at  
13 the rate it currently is, as there presently does not exist sufficient empty space for the  
14 projected volume of CCR the Companies must store. If Sterling Ventures’ mining  
15 slows due to market conditions, lack of marketable limestone reserves, or for other  
16 reasons, the amount of usable storage space will decline correspondingly. Sterling  
17 Ventures refused to provide copies of any feasibility, reserve or market studies  
18 regarding its mine and reserves and claimed those reports are not relevant. Nothing  
19 could be more relevant to a proposal to accept CCR for disposal for almost 40 years.  
20 Moreover, if Sterling Ventures shuts the mine, or its operations are halted for a  
21 safety issue or any other reason, the Companies would unduly expose their customers  
22 to the risks posed by the possibility of suspending generation at one or more of the  
23 most economical stations while seeking other interim means for managing the CCR.

1 **Q. Do the Companies have concerns about the feasibility of the CCR being placed**  
2 **into the Sterling Ventures mine?**

3 A. Yes. First, it is not presently clear how Sterling Ventures plans to transport the CCR  
4 into its mine. Its responses to the Companies' requests are very superficial and do not  
5 indicate if shafts would be used to convey CCR into the mine and, if so, how many  
6 shafts would be used and what the capital costs would be for each. The Companies  
7 are very concerned with the long term viability and safety of mine access and expect  
8 that vertical mine shafts, as well as dust control infrastructure inherent with the  
9 handling of CCR materials based on the Companies' experience, would have to be  
10 constructed at an additional cost given the intensive delivery schedule that would be  
11 required. None of these costs are included in Sterling Ventures' complaint and  
12 exhibits thereto.

13 **Q. Has Sterling Ventures provided meaningful assurances of performance to the**  
14 **Companies?**

15 A. No, they have not. In fact, as mentioned above, Sterling Ventures refused to provide  
16 audited financial information even when asked during the Companies' investigation  
17 of Sterling Ventures' limestone mine as an alternative for CCR disposal at Trimble  
18 County. Sterling Ventures likewise refused to provide this information when  
19 requested in discovery in this case. In addition, Sterling Ventures has provided no  
20 meaningful financial assurances or offered securities relevant to its financial  
21 performance other than stating it could provide bonding or other similar arrangement.  
22 The Companies cannot pursue a decades-long business arrangement with Sterling  
23 Ventures, when the electrical generation operation of the Ghent and Trimble County  
24 stations are at risk, without sufficient confidence in Sterling Ventures' ability to

1 perform, and such confidence requires more than a bonding arrangement. In response  
2 to discovery questions, Sterling Ventures only committed to a three year period with  
3 promise to provide bonding assurances that would allow the Companies to proceed  
4 with the Trimble County Landfill construction. Sterling Ventures seems to presume  
5 the requisite permits and authority to construct would still be viable at some future  
6 point in time.

7 **Q. Does Sterling Ventures have experience in placing CCR in its limestone mine?**

8 A. No, it does not. Sterling Ventures admitted in discovery that no CCR has ever been  
9 placed on property managed by Sterling Ventures.<sup>36</sup> Even more concerning, none of  
10 the personnel identified by Sterling Ventures has any experience in managing CCR,  
11 either.<sup>37</sup> This lack of experience is of great concern to the Companies, as Sterling  
12 Ventures admittedly is unfamiliar with the handling of CCR, much less the volumes  
13 of it Trimble County and Ghent produce. This raises additional concerns about the  
14 adequacies of the cost information Sterling Ventures has provided to the Companies,  
15 as it is questionable whether a company that has no experience in handling CCR  
16 could estimate with any reasonability the costs of a voluminous long-term project.

17 **Q. Please describe the impact to customers if the Ghent or Trimble County stations  
18 are not in compliance with the CCR Rule.**

19 A. If the Companies selected Sterling Ventures to store their CCR without sufficient  
20 backup facilities, and the storage became unavailable, the unavailability of CCR  
21 Rule-compliant offsite storage would potentially require reduced output and possibly  
22 the shutting down of the affected stations. This, in turn, would require the Companies

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<sup>36</sup> Sterling Ventures' Response to the Companies' Request for Information No. 24.

<sup>37</sup> Sterling Ventures' Response to the Companies' Request for Information No. 25.

1 to explore costly temporary arrangements with private or municipal landfills. As  
2 explained in the testimony of Mr. Sinclair, the costs to customers of not having a  
3 repository to store CCR are significant, and would jeopardize the Companies' ability  
4 to serve their required load. In other words, even assuming that the PVRR of the  
5 Sterling Ventures' notional concept was close to the PVRR for the Trimble County  
6 Landfill, the resulting cost that would occur if Sterling Ventures notional concept is  
7 wrong is enormous.

8 **Companies' Commitment to Beneficial Reuse**

9 **Q. Sterling Ventures suggests that the Companies have selected a higher cost**  
10 **landfill option at the expense of a lower cost beneficial use option. Is this true?**

11 A. No, it is not. As I have explained, the landfill option was, and remains, the least cost  
12 CCR disposal option. Also, as Mr. Revlett's testimony shows, the Companies do not  
13 believe that utilizing Sterling Ventures' mine will constitute beneficial use under the  
14 CCR Rule. To be sure, the Companies diligently pursue economical beneficial reuse  
15 opportunities.

16 In the Commission proceedings regarding the 2009 ECR Plans, an exhibit to  
17 my direct testimony was the Companies' Comprehensive Strategy for Management of  
18 Coal Combustion Byproducts, which sets forth the Companies' long-held business  
19 commitment to economic and environmentally responsible beneficial reuse projects.  
20 The Companies have adhered to this policy by entering into a number of beneficial  
21 reuse agreements, including at Ghent and Trimble County. For example, at Ghent the  
22 Companies have had an agreement with CertainTeed (and a predecessor entity) since  
23 1999 under which CertainTeed takes gypsum that is beneficially reused in wallboard.  
24 Also, the Companies entered into an agreement with Charah, Inc. in 2014 under

1           which Charah takes fly ash from Ghent that is beneficially reused in concrete. The  
2           Companies have a similar agreement with Charah at Trimble County, as well. The  
3           Companies also have agreements with Holcim (US) Inc. to take fly ash from Trimble  
4           County for use in cement, in addition to an agreement with Synthetic Materials, LLC  
5           to take gypsum. These opportunities, in marked contrast to Sterling Ventures' offer,  
6           constitute well-recognized examples of beneficial reuse and do not require the  
7           Companies to pay large tipping and other fees.

8           The Companies' Comprehensive Strategy for Management of Coal  
9           Combustion Byproducts, combined with over fifteen years of exploring and  
10          implementing environmentally responsible beneficial reuse arrangements prove that  
11          the Companies reduce the amount of CCR through such arrangements so long as they  
12          are economical. Sterling Ventures' proposals, in contrast, have not been economical  
13          and would not constitute beneficial use under the final CCR rules.

14       **Q. Do you have a recommendation to the Commission?**

15       A. Yes, I do. I respectfully request the Commission deny Sterling Ventures' request to  
16          cap the Companies' cost recovery related to the Ghent Landfill because it was, and  
17          remains, the least cost and most feasible long-term CCR disposal solution. I further  
18          respectfully request the Commission deny Sterling Ventures' request to revoke the  
19          Companies' CPCN for the Trimble County Landfill. As with the Ghent Landfill, it is  
20          the least cost and most feasible long-term option to dispose of CCR. Finally, I  
21          request the authority granted by the Commission with the CPCN in 2009 for the  
22          Companies to begin construction of the Trimble County Landfill, including the  
23          CCRT, be reaffirmed.

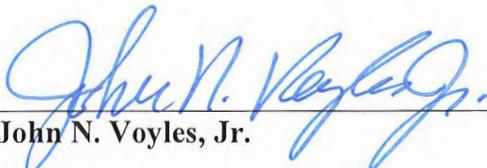
24       **Q. Does this conclude your testimony?**

1 A. Yes, it does.

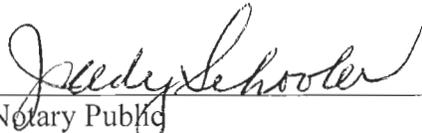
VERIFICATION

COMMONWEALTH OF KENTUCKY )  
 ) SS:  
COUNTY OF JEFFERSON )

The undersigned, **John N. Voyles, Jr.**, being duly sworn, deposes and says that he is Vice President, Transmission and Generation Services for Kentucky Utilities Company and Louisville Gas and Electric Company and an employee of LG&E and KU Services Company, and that he has personal knowledge of the matters set forth in the foregoing testimony, and that the answers contained therein are true and correct to the best of his information, knowledge and belief.

  
\_\_\_\_\_  
**John N. Voyles, Jr.**

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 6<sup>th</sup> day of August 2015.

  
\_\_\_\_\_  
Notary Public (SEAL)

My Commission Expires:  
**JUDY SCHOOLER**  
**Notary Public, State at Large, KY**  
**My commission expires July 11, 2013**  
**Notary ID # 512743**

## APPENDIX A

### **John N. Voyles, Jr.**

Vice President, Transmission and Generation Services  
Louisville Gas and Electric Company and Kentucky Utilities Company  
220 West Main Street  
Louisville, Kentucky 40202  
(502) 627-4762

### **Education**

Rose-Hulman Institute of Technology, B.S. in Mechanical Engineering - 1976

### **Previous Positions**

#### **E.ON U.S. LLC**

June 2008 - Present - Vice President, Transmission and Generation Services

2003 - 2008 - Vice President, Regulated Generation

#### **LG&E Energy Corp.**

February - May 2003 -- Director, Generation Services

#### **Louisville Gas and Electric Company**

1998 - 2003 -- General Manager, Cane Run, Ohio Falls and  
Combustion Turbines

1996 - 1998 -- General Manager, Jefferson County Operations

1991 - 1995 -- Director, Environmental Excellence

1989 - 1991 -- Division Manager, Power Production, Mill Creek

1984 - 1989 -- Assistant Plant Manager, Mill Creek

1982 - 1984 -- Technical and Administrative Manager, Mill Creek

1976 - 1982 -- Mechanical Engineer

### **Professional Development**

Emory Business School -- Management Development Program

Center for Creative Leadership (La Jolla, CA)

University of Louisville - The Effective Executive

Harvard Business School - Finance for the Non-Financial Manager

MIT - Leading Innovation & Growth: Managing the International Energy Co.

### **Board/Committee Memberships**

Fund for the Arts - Board Member

Ohio Valley Electric Co. (OVEC) - Board member and Executive Committee member

Electric Energy, Inc. - Board member

Edison Electric Institute (EEI) - Committee member Energy Supply Executive Advisory  
Committee and the Environment Executive Advisory Committee

Electric Power Research Institute (EPRI) - Chairman, Research Advisory Committee



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

FEB 12 2015

Ms. Lee Anne Devine  
Chief  
Regulatory Branch  
Louisville District Corps of Engineers  
CELRL-OP-FS, Room 752  
P.O. Box 59  
Louisville, Kentucky 40201-0059

Subject: Louisville Gas & Electric Company  
Coal Combustion Residuals Landfill, Trimble County, Kentucky  
LRL-2010-711

Dear Ms. Devine:

The U.S. Environmental Protection Agency is in receipt of information submitted by the Louisville Gas & Electric Company (LG&E) on December 26, 2014, titled "Supplement to Alternatives Analysis Report" for the above referenced project. This information was submitted in response to the EPA comment letters dated July 11, 2014, and August 7, 2014, pursuant to Part IV, paragraphs 3(a) and 3(b), respectively, of the 1992 Clean Water Act Section 404(q) Memorandum of Agreement (MOA) between the EPA and the Department of the Army.

The EPA has reviewed this information, and although we remain concerned with the magnitude of proposed impacts to jurisdictional waters of the United States, we find that the information is generally responsive to the comments outlined in our comment letters. We look forward to the receipt of the Louisville District Corps of Engineers' *Notice of Intent to Proceed* consistent with Part IV, paragraph 3(c) of the above referenced MOA.

If you have any questions, please do not hesitate to call me at (404) 562-9243, or Mr. Eric Somerville at (706) 355-8514.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas McGill", written over a large, stylized flourish.

Thomas McGill  
Chief

Ocean, Wetlands & Streams Protection Branch

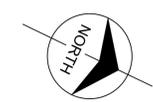
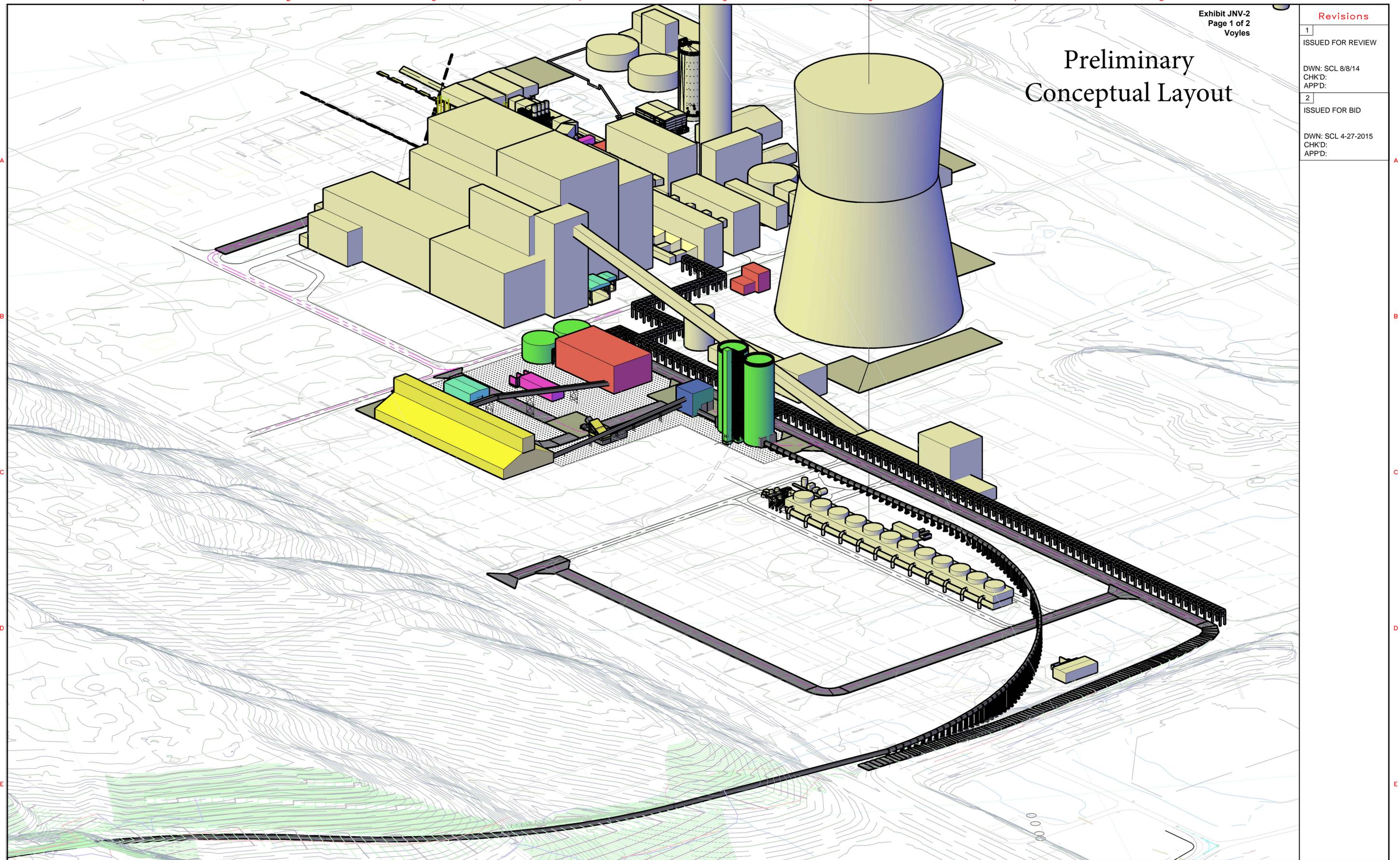
cc: Mr. Lee Andrews, U.S. Fish and Wildlife Service  
Mr. Peter Goodman, Kentucky Division of Water

Internet Address (URL) • <http://www.epa.gov>

Revisions

1	ISSUED FOR REVIEW
	DWN: SCL 8/8/14 CHK'D: APP'D:
2	ISSUED FOR BID
	DWN: SCL 4-27-2015 CHK'D: APP'D:

# Preliminary Conceptual Layout



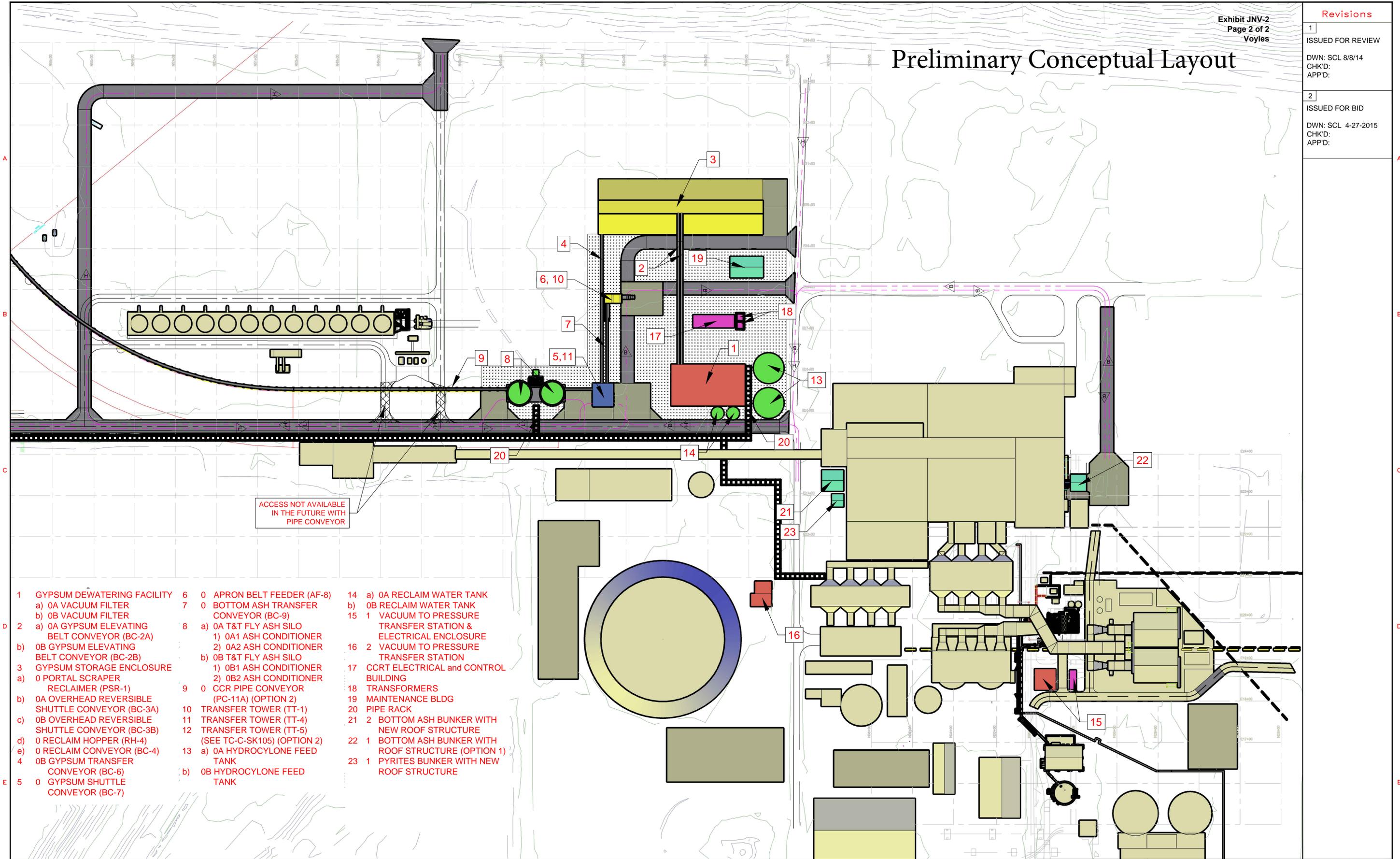
**Burns & McDonnell**  
INTERNATIONAL  
9400 WARD PARKWAY  
KANSAS CITY, MO 64114  
816-333-9400

Location and Unit: TC0	Contract No. n/a	Scale: None	Engineering discipline: C	Drawing type: GA	Drawn: AJZ 10/17/13
 <b>IG&amp;E</b> Generation Services LOUISVILLE GAS & ELECTRIC COMPANY a PPL company				Approved:	Released for: BID
<b>TRIMBLE COUNTY CCRT PROJECT</b> GENERAL ARRANGEMENT NORTH-EAST VIEW				Alternate Drawing No.	Rev.
Originator: BURNS & McDONNELL	Job or Project No.:	Drawing No.:	TC0-C-SK104 2		

# Preliminary Conceptual Layout

Revisions

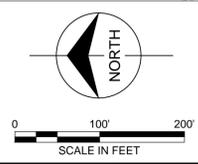
1	ISSUED FOR REVIEW
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2	ISSUED FOR BID
DWN: SCL 4-27-2015 CHK'D: APP'D:	



- |   |  |    |   |    |  |
|---|--|----|---|----|--|
| 1 | GYPSUM DEWATERING FACILITY                         | 6  | 0 APRON BELT FEEDER (AF-8)                        | 14 | a) 0A RECLAIM WATER TANK                                     |
|   | a) 0A VACUUM FILTER                                | 7  | 0 BOTTOM ASH TRANSFER CONVEYOR (BC-9)             |    | b) 0B RECLAIM WATER TANK                                     |
|   | b) 0B VACUUM FILTER                                | 8  | a) 0A T&T FLY ASH SILO                            | 15 | 1 VACUUM TO PRESSURE TRANSFER STATION & ELECTRICAL ENCLOSURE |
| 2 | a) 0A GYPSUM ELEVATING BELT CONVEYOR (BC-2A)       |    | 1) 0A1 ASH CONDITIONER                            | 16 | 2 VACUUM TO PRESSURE TRANSFER STATION                        |
|   | b) 0B GYPSUM ELEVATING BELT CONVEYOR (BC-2B)       |    | 2) 0A2 ASH CONDITIONER                            | 17 | CCRT ELECTRICAL and CONTROL BUILDING                         |
| 3 | GYPSUM STORAGE ENCLOSURE                           |    | b) 0B T&T FLY ASH SILO                            | 18 | TRANSFORMERS   |
|   | a) 0 PORTAL SCRAPER RECLAIMER (PSR-1)              |    | 1) 0B1 ASH CONDITIONER                            | 19 | MAINTENANCE BLDG   |
|   | b) 0A OVERHEAD REVERSIBLE SHUTTLE CONVEYOR (BC-3A) |    | 2) 0B2 ASH CONDITIONER                            | 20 | PIPE RACK  |
|   | c) 0B OVERHEAD REVERSIBLE SHUTTLE CONVEYOR (BC-3B) | 9  | 0 CCR PIPE CONVEYOR (PC-11A) (OPTION 2)           | 21 | 2 BOTTOM ASH BUNKER WITH NEW ROOF STRUCTURE                  |
|   | d) 0 RECLAIM HOPPER (RH-4)                         | 10 | TRANSFER TOWER (TT-1)                             | 22 | 1 BOTTOM ASH BUNKER WITH ROOF STRUCTURE (OPTION 1)           |
|   | e) 0 RECLAIM CONVEYOR (BC-4)                       | 11 | TRANSFER TOWER (TT-4)                             | 23 | 1 PYRITES BUNKER WITH NEW ROOF STRUCTURE                     |
| 4 | 0B GYPSUM TRANSFER CONVEYOR (BC-6)                 | 12 | TRANSFER TOWER (TT-5) (SEE TC-C-SK105) (OPTION 2) |    |  |
| 5 | 0 GYPSUM SHUTTLE CONVEYOR (BC-7)                   | 13 | a) 0A HYDROCYCLONE FEED TANK                      |    |  |
|   |  |    | b) 0B HYDROCYCLONE FEED TANK                      |    |  |

- BOTTOM ASH TRAFFIC FLOW
- LANDFILL TRUCK TRAFFIC FLOW
- HIGHWAY TRUCK TRAFFIC FLOW

- CONCRETE TRUCK PAVEMENT
- ASPHALT TRUCK PAVEMENT
- ASPHALT SURFACING



 9400 WARD PARKWAY KANSAS CITY, MO 64114 816-333-9400	Location and Unit: TCO Scale: 1/8"=1'-0" Contract No: n/a Engineering discipline: C Drawing type: GA	 Generation Services LOUISVILLE GAS & ELECTRIC COMPANY a PPL company	Drawn: JCC 8/8/14 Checked: Approved: Released for: BID Alternate Drawing No: Rev.
	TRIMBLE COUNTY CCRT PROJECT GENERAL ARRANGEMENT ENLARGED PLAN		Drawing No: TCO-C-SK102 Rev. 2 DMS Version 2.0

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

**In the Matter of:**

<b>INVESTIGATION OF KENTUCKY</b>	)	
<b>UTILITIES COMPANY'S AND LOUISVILLE</b>	)	<b>CASE NO. 2015-00194</b>
<b>GAS AND ELECTRIC COMPANY'S</b>	)	
<b>RESPECTIVE NEED FOR AND COST OF</b>	)	
<b>MULTIPHASE LANDFILLS AT THE</b>	)	
<b>TRIMBLE COUNTY AND GHENT</b>	)	
<b>GENERATING STATIONS</b>	)	

**TESTIMONY OF**  
**GARY H. REVLETT**  
**DIRECTOR, ENVIRONMENTAL AFFAIRS**  
**KENTUCKY UTILITIES COMPANY AND**  
**LOUISVILLE GAS AND ELECTRIC COMPANY**

**Filed: August 6, 2015**

1 **Q. Please state your name, position and business address.**

2 A. My name is Gary H. Revlett. I am the Director of Environmental Affairs for Kentucky  
3 Utilities Company (“KU”) and Louisville Gas and Electric Company (“LG&E”). I am  
4 employed by LG&E and KU Services Company, which provides services to LG&E  
5 and KU (collectively “the Companies”). My business address is 220 West Main Street,  
6 Louisville, Kentucky, 40202. A complete statement of my education and work  
7 experience is attached to this testimony as Appendix A.

8 **Q. Have you previously testified before this Commission?**

9 A. Yes, I have testified before the Commission in a number of proceedings. I testified  
10 most recently in the Companies’ application for a certificate of public convenience and  
11 necessity to build a natural gas combined cycle generating unit at the Green River  
12 Generating Station (Case No. 2014-00002).

13 **Q. Are you sponsoring any exhibits?**

14 A. Yes, I am sponsoring Exhibit GHR-1 which is e-mail correspondence between Bruce  
15 Scott, Commissioner of the Kentucky Department of Environmental Protection, and  
16 me. Also, although I have not attached the CCR Final Rule as an Exhibit, I have  
17 provided a link below to it.<sup>1</sup>

18 **Q. What is the purpose of your testimony?**

19 A. The purpose of my testimony is to identify and explain the United States Environmental  
20 Protection Agency’s (“EPA”) issuance of a final rule to regulate the disposal of coal  
21 combustion residuals (“CCR”). That final rule (“CCR Final Rule”) has been issued  
22 and will be effective on October 19, 2015. My testimony will explain the parts of the

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<sup>1</sup> For a link to the CCR Final Rule, see CCR Final Rule.

1 CCR Final Rule that impact and relate to Sterling Ventures’ (“Sterling”) offer to place  
2 CCR at its limestone mine site in Gallatin County, Kentucky.

3 **Q. Please provide a summary of the CCR Final Rule.**

4 A. On April 17, 2015, the EPA published the CCR Final Rule in the Federal Register. The  
5 CCR Final Rule finalized national regulations to provide a comprehensive set of  
6 requirements for the safe disposal of CCR, commonly known as coal ash, from coal-  
7 fired power plants such as the Companies’ Trimble County and Ghent power plants.  
8 The CCR Final Rule was the culmination of extensive study of the effects of coal ash  
9 on the environment and public health. It establishes technical requirements for CCR  
10 landfills and surface impoundments under subtitle D of the Resource Conservation and  
11 Recovery Act (RCRA), the nation's primary law for regulating solid waste.<sup>2</sup>

12 **Q. Please describe the environmental event that led to the CCR Final Rule.**

13 A. On December 22, 2008, a large coal ash spill occurred at the Tennessee Valley  
14 Authority (“TVA”) power plant in Kingston, TN. That spill flooded more than 300  
15 acres of land and released coal ash into nearby rivers. The TVA spill prompted the  
16 EPA to assess coal ash risks and gather information from facilities managing coal ash  
17 nationwide.<sup>3</sup> That effort ultimately led to the CCR Final Rule.

18 **Q. What are some of the specific risks the CCR Final Rule addresses?**

19 A. The CCR Final Rule addresses the risks from coal ash disposal: leaking of  
20 contaminants into ground water, blowing of contaminants into the air as dust, surface  
21 runoff, and the potential failure of coal ash surface impoundments. The rule establishes  
22 detailed and stringent design, monitoring, operating, corrective action, closure, and

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<sup>2</sup> <http://www2.epa.gov/coalash/coal-ash-rule>

<sup>3</sup> Id.

1 post-closure requirements for CCR landfills and impoundments. Additionally, the rule  
2 sets out recordkeeping and reporting requirements as well as the requirement for each  
3 facility to establish and post specific information to a publicly-accessible website.  
4 Finally, the CCR Final Rule also supports the responsible recycling of CCR by  
5 distinguishing safe, beneficial use of CCR from actual disposal of it.<sup>4</sup>

6 **Q. Would the CCR Final Rule apply to the Sterling mine if CCR were placed there?**

7 A. Yes. The definition of “CCR Landfill” in the rule includes “an area of land or  
8 excavation that receives CCR and which is not a surface impoundment, an underground  
9 injection well, a salt dome formation, a salt bed formation, an underground or surface  
10 coal mine, or a cave. For the purpose of this subpart, a CCR landfill also includes sand  
11 and gravel pits and quarries that receive CCR, CCR piles, and any practice that does  
12 not meet the definition of beneficial reuse of CCR.”<sup>5</sup> By specifically excluding  
13 underground coal mines from the definition, it logically follows that other types of  
14 underground mines are subject to the regulation as landfills when used for disposal of  
15 CCR. There is no question that Sterling’s underground limestone mine is subject to  
16 the disposal requirements of CCR under the CCR Final Rule.

17 **Q. Is it significant that the Sterling mine would be a CCR Landfill under the CCR  
18 Final Rule?**

19 A. Yes, it is extremely significant. It means that Sterling would have to comply with all  
20 of the CCR Final Rule requirements related to the disposal of CCR in a new landfill,  
21 including lining, landfill design, monitoring, operating, corrective action, closure, and

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<sup>4</sup> Id.

<sup>5</sup> 80 Fed. Reg. at 21469.

1 post-closure requirements. That significance is not lost on Sterling as shown by its  
2 unwillingness to operate as a CCR Landfill.<sup>6</sup>

3 **Q. Does the CCR Final Rule provide any exemptions?**

4 A. Yes. As mentioned above, the CCR Final Rule distinguishes between disposal of CCR  
5 and the recycling of it. If the CCR is being recycled in the form of a “beneficial use,”  
6 then it is not considered “disposal” and the rigorous requirements imposed on CCR  
7 Landfills would not apply.<sup>7</sup>

8 **Q. Is it likely that the Sterling offer would qualify as beneficial use of CCR rather  
9 than disposal, and, therefore qualify for the exemption?**

10 A. No, not at all. The CCR Final Rule sets forth a four-part test to determine whether a  
11 proposed activity qualifies as a beneficial use:<sup>8</sup>

- 12 a. The CCR must provide a functional benefit;
- 13 b. The CCR must substitute for the use of a virgin material,  
14 conserving natural resources that would otherwise need to be  
15 obtained through practices such as extraction;
- 16 c. The use of CCR must meet relevant product  
17 specifications, regulatory standards, or design standards, and  
18 where such standards have not been established, CCR may not  
19 be used in excess quantities; and
- 20 d. When unencapsulated use of CCR involves placement  
21 on the land of 12,400 tons or more in non-roadway applications,  
22 the user must demonstrate and keep records, and provide such  
23 documentation upon request, that environmental releases to  
24 ground water, surface water, soil and air are comparable to or  
25 lower than those from analogous products made without CCRs,  
26 or that environmental releases to ground water, surface water,  
27 soil and air will be at or below relevant regulatory and health-  
28 based benchmarks for human and ecological receptors during  
29 use.

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<sup>6</sup> See Sterling’s July 16, 2015 Response to Item No. 38 of the Companies’ First Set of Data Requests.

<sup>7</sup> 80 Fed. Reg. 21302, 21304, and 21309.

<sup>8</sup> 80 Fed. Reg. at 21469.

1 In the preamble to the CCR Final Rule, the EPA stated, “any use that fails to comply  
2 with all of the relevant criteria will be considered to be disposal of CCR, subject to all  
3 of the requirements in the disposal regulations, and the user will be considered to be  
4 the owner or operator of a CCR disposal unit.”<sup>9</sup>

5 The Sterling offer of placing CCR in its mine would fail to meet most, if not  
6 all, of the four parts of the beneficial use test. First, Sterling seems to claim that placing  
7 CCR in its mine would provide the functional benefit of aiding mine ventilation.<sup>10</sup>  
8 Notably, this claimed and novel functional benefit is markedly dissimilar to the  
9 examples EPA provided, including the improved characteristics of concrete when made  
10 with CCR, using gypsum from flue gas desulfurization in making wallboard, and using  
11 CCR as a soil amendment to improve pH.<sup>11</sup>

12 It seems that any claimed functional benefit from placing unencapsulated CCR  
13 in the Sterling mine would generate more environmental releases than what would  
14 otherwise be in Sterling’s mine to cordon off areas not needing ventilation. Typically,  
15 plastic sheeting, curtains, concrete block walls, or some combination thereof are used  
16 to manage ventilation. Unencapsulated CCR is much more likely to migrate (in the  
17 form of dust) than the solid materials traditionally used for ventilation. In fact, the  
18 underground transport of CCR in diesel trucks and the management of the CCR  
19 underground will generate dust and diesel fumes that must be ventilated out of the mine  
20 to the atmosphere. (If a shaft is used for dumping CCR into the mine, even more dust

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<sup>9</sup> 80 Fed. Reg. 21349.

<sup>10</sup> See Sterling’s June 25, 2015 letter (page 2) to Kimberly Simpson of the Army Corps of Engineers which is attached to Sterling’s July 16, 2015 Response to Item No. 18 of the Companies’ First Set of Information Requests.

<sup>11</sup> 80 Fed. Reg. 21327, 21347, and 21349.

1 would be generated underground.) This increased ventilation need and related impacts  
2 are not addressed by Sterling in its analysis. If not for the disposal of 34 MCY of CCR  
3 in the mine over 38 years, these emissions would not occur and would not require  
4 ventilation.

5 Second, the test requires that use of CCR must substitute for the use of a virgin  
6 material, and it is clear that a virgin material is a naturally occurring material that must  
7 be mined or extracted.<sup>12</sup> It is not clear what virgin material CCR would replace in  
8 Sterling’s mine; some mines direct airflow and provide necessary ventilation with  
9 materials like plastic sheeting or concrete block walls placed between pillars in certain  
10 areas. In Sterling’s discovery responses, Sterling seems to claim that it would meet  
11 this part of the test by using CCR “to construct air stoppings in the mine . . . .”<sup>13</sup> for  
12 ventilation purposes, but Sterling’s Mine Ventilation Plan indicates that the mine “does  
13 not create any water, nor do we have ventilation doors, air regulators, or stoppings.”<sup>14</sup>  
14 To the extent CCR will be used to construct “stoppings” that are not part of the  
15 ventilation plan, there is no “substitute” under this part of the test.

16 Third, the rules states that CCR “may not be used in excess quantities” under  
17 the guise of beneficial use. Here, even if use of some CCR could help ventilation in  
18 Sterling’s mine by closing off areas where ventilation is not required, only enough CCR  
19 to close off such areas would be permitted under the beneficial use test. Sterling’s offer  
20 does not reflect any desire to only use enough CCR to improve ventilation. Rather,

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<sup>12</sup> 80 Fed. Reg. 21349.

<sup>13</sup> See Sterling’s June 25, 2015 letter (page 2) to Kimberly Simpson of the Army Corps of Engineers which is attached to Sterling’s July 16, 2015 Response to Item No. 18 of the Companies’ First Set of Information Requests.

<sup>14</sup> See Sterling’s “Ventilation Plan for Underground” which was attached to Sterling’s July 16, 2015 Response to Item No. 8 of the Companies’ First Request for Information.

1 Sterling claims it can dispose CCR in quantities that far exceed an amount necessary  
2 to cordon off certain areas of the mine.

3 Fourth and finally, Sterling has not demonstrated that it can and will meet the  
4 fourth part of the beneficial use test. Sterling would have to keep records, and provide  
5 such documentation upon request, that environmental releases to ground water, surface  
6 water, soil and air are comparable to or lower than those from analogous products made  
7 without CCRs, or that environmental releases to ground water, surface water, soil and  
8 air will be at or below relevant regulatory and health-based benchmarks for human and  
9 ecological receptors during use.

10 **Q. Has the EPA addressed whether placing CCR in a quarry is a beneficial use?**

11 A. Yes. In the Preamble to the CCR Final Rule, the EPA recognized that large scale  
12 placement, akin to disposal, of CCR has occurred in the past under the guise of  
13 “beneficial use” – the “beneficial” use being the filling up of old quarries or gravel pits,  
14 or the re-grading of landscape.<sup>15</sup> With that recognition, when the CCR Final Rule was  
15 drafted, the EPA expressly defined the placement of CCR in sand and gravel pits or  
16 quarries as disposal in a landfill rather than beneficial use.<sup>16</sup> The Preamble states, “EPA  
17 has adopted criteria in the final rule to ensure that inappropriate uses that effectively  
18 are disposal will be regulated as disposal.”<sup>17</sup>

19 **Q. Have you considered whether the May 26, 2015 e-mail from an EPA employee to**  
20 **Sterling affects the issue of whether the Sterling offer to place CCR is a beneficial**  
21 **use?**

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<sup>15</sup> 80 Fed. Reg. 21330.

<sup>16</sup> 80 Fed. Reg. 21330 and 21354.

<sup>17</sup> 80 Fed. Reg. 21330.

1 A. Yes. It is clear from the language of that e-mail that the EPA employee does not say  
2 that placing CCR in Sterling’s mine would qualify as beneficial use. To the contrary,  
3 the e-mail only quotes verbatim from the CCR Final Rule in stating that CCR Landfill  
4 requirements would not apply if placement was deemed beneficial use. Otherwise,  
5 placement would be disposal. Notably, this e-mail is the only documentation Sterling  
6 has produced in response to information requests seeking any communications received  
7 by Sterling from any federal or state agency regarding whether the Sterling offer would  
8 be beneficial use.<sup>18</sup> It is of no value in determining whether the Sterling offer would  
9 qualify as beneficial use of CCR rather than disposal, and, therefore qualify for the  
10 exemption.

11 **Q. Have you considered whether Sterling’s current Kentucky beneficial reuse permit**  
12 **could be used to establish that placement of CCR in Sterling’s mine would**  
13 **constitute beneficial use under the CCR final rule?**

14 A. Yes. Sterling’s current Kentucky beneficial reuse permit was issued before the CCR  
15 Final Rule becomes effective and does not trump the CCR Final Rule. At a minimum,  
16 there is no assurance that either Sterling or the Companies would be protected from an  
17 allegation, lawsuit or a combination thereof, by virtue of Sterling having a beneficial  
18 reuse permit issued by the Kentucky Division of Waste Management (“KDWM”).  
19 Kentucky’s beneficial reuse regulation does not require compliance with the four  
20 criteria specified above for beneficial use under the new federal standard.<sup>19</sup> For all the  
21 reasons stated above, placing CCR in Sterling’s mine does not meet the requirements  
22 of the CCR Final Rule.

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<sup>18</sup> See Sterling’s July 16, 2015 Response to Item No. 26 of the Companies’ First Set of Data Requests.

<sup>19</sup> 401 KAR 45:060.

1 **Q. Does Sterling assert that KDWM supports the viability of Sterling’s contention**  
2 **that CCR material generated by the LG&E Trimble station could be beneficially**  
3 **used at Sterling’s mine under the EPA CCR final rule?**

4 A. Yes. In its June 25, 2015 correspondence, Sterling claims that the Kentucky Division  
5 of Solid Waste “assured Sterling that the new CCR regulations would have no effect  
6 on Sterling’s Beneficial Reuse Permit.”<sup>20</sup> Sterling has also stated that KDWM’s staff  
7 has taken the position that “the CCR regulations as finally adopted would not prohibit  
8 Sterling from amending its existing permit to allow Sterling to beneficially reuse  
9 Trimble County’s CCR . . . .”<sup>21</sup> Finally, Sterling has stated that it has confirmed in  
10 phone conversations with KDWM personnel “that the new CCR regulations would not  
11 affect Sterling’s ability to beneficially reuse CCR in its limestone mine.”<sup>22</sup>

12 **Q. Did you investigate Sterling’s claims?**

13 A. Yes. Given Sterling’s representations about KDWM’s position on this issue, I  
14 contacted Bruce Scott, Commissioner of the Kentucky Department for Environmental  
15 Protection (“KDEP”) and Tony Hatton, Director of KDWM.<sup>23</sup> KDWM is a division of  
16 KDEP. In response, Mr. Scott, Commissioner of KDEP, wrote the following:

17 In response to your inquiry below, the agency has not taken any  
18 official position regarding the viability of whether Coal  
19 Combustion Residuals (CCR) material generated by the LG&E  
20 Trimble station could be beneficially reused at the Sterling  
21 Ventures operation as it relates to the April 17, 2015 USEPA  
22 final federal rule for the management of Coal Combustion  
23 Residuals (CCR) from electric utilities.

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<sup>20</sup> See Sterling’s June 25, 2015 letter (page 3) to Kimberly Simpson of the Army Corps of Engineers which is attached to Sterling’s July 16, 2015 Response to Item No. 18 of the Companies’ First Set of Information Requests.

<sup>21</sup> See Sterling’s July 16, 2015 Response to Item No. 2(b) of Commission’s Staff’s First Set of Information Requests.

<sup>22</sup> See Sterling’s July 16, 2015 Response to Item No. 9 of Commission’s Staff’s First Set of Information Requests.

<sup>23</sup> The e-mail correspondence is attached as Exhibit GHV-1.

1 Sterling Ventures (AI 1461, Gallatin County, KY) is currently  
2 permitted by the Kentucky Division of Waste Management  
3 under the existing state (Kentucky) permitting program for  
4 beneficial reuse (Registered Permit by Rule – RPBR) to receive  
5 FGD Gypsum from the KU Ghent Power Station in Ghent, KY.  
6 The operation is not currently permitted under the new USEPA  
7 CCR regulatory program.

8 While Kentucky is currently internally in the process of seeking  
9 to revise its Special Waste regulations to reflect the new federal  
10 EPA CCR rule, those regulations have yet to be formally filed  
11 with LRC and as such the Commonwealth does not at this time  
12 have permitting jurisdiction to implement the federal rules. In  
13 addition, as finalized by USEPA the federal rules are by EPA’s  
14 definition “self-implementing”, meaning that utilities are  
15 currently obligated to interpret and implement the regulations  
16 upon themselves with third party oversight.

17 Thus, based on Mr. Scott’s correspondence, it is clear that Kentucky has not taken a  
18 position on whether Sterling’s offer would be beneficial use under the CCR Final Rule,  
19 and that, at this time, Kentucky has no permitting jurisdiction to implement the CCR  
20 Final Rule as a matter of state law.

21 **Q. If the Sterling offer is not beneficial use, and, therefore, CCR placement would be**  
22 **a CCR Landfill, what evidence has Sterling provided to the Companies that it can**  
23 **now and in the future meet the rigorous CCR Landfill requirements?**

24 A. None. In fact, Sterling’s discovery responses are clear that Sterling has no intention of  
25 meeting CCR Landfill requirements. Sterling states that, to the extent CCR cannot be  
26 beneficially used, Sterling would ship it to a “qualified disposal site or beneficial user  
27 for a period of up to three years . . . .”<sup>24</sup>

28 **Q. Would Sterling’s offer expose the Companies and their customers to unreasonable**  
29 **risk?**

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<sup>24</sup> See Sterling’s July 16, 2015 Response to Item No. 38 of the Companies’ First Set of Information Requests.

1 A. Yes. As discussed by Mr. Voyles in his testimony, the CCR Final Rule is self-  
2 enforcing, so that there is no ability to obtain a permit from the EPA or the state that  
3 would shield an entity such as Sterling – as well as the Companies – from liability so  
4 long as the permit is adhered to, and there is currently no mechanism for the EPA or  
5 the state to make binding determinations regarding the scope of coverage under the  
6 CCR Final Rule. Instead, the EPA is relying on citizens, environmental groups, and  
7 others to enforce the Final Rule through litigation, which can be brought at any time a  
8 group believes that an operation involving the disposition of CCR is not in compliance  
9 with the Final Rule. If an individual or group concluded that Sterling was placing CCR  
10 in its mine in a manner that violated the Final Rule, that individual or group could file  
11 suit seeking civil penalties, injunctive relief or both. As a result, the Companies would  
12 run the risk that an injunction would shut down CCR operations at the mine either  
13 temporarily or permanently, leaving the Companies without the means to dispose of  
14 their CCR. Moreover, it is possible that an individual or group could seek to hold not  
15 just Sterling but also the Companies liable for alleged violations of the CCR Final Rule  
16 given their role as the generators of the CCR in question and the Companies’ credit  
17 worthiness.

18 **Q. Please summarize your conclusions of the possibility of placing CCR in Sterling’s**  
19 **mine.**

20 A. Sterling’s mine is unlikely to meet the CCR Final Rule’s disposal requirements for a  
21 CCR Landfill without substantial additional design and operating cost retrofits. Since  
22 Sterling’s offer to place CCR is unlikely to qualify as beneficial use, it is unlikely the  
23 Companies would be able to place CCR in Sterling’s mine without incurring significant

1 risk of costly citizen suits seeking injunctive relief and civil penalties that could occur  
2 under the self-implementing nature of the CCR Final Rule.

3 **Q. Do you have a response to Paragraphs 20, 28-34, 38-49, and 63 of Sterling's**  
4 **Complaint in this matter?**

5 A. To the extent those Paragraphs contain material allegations at issue in this matter (as  
6 opposed to rhetoric and narrative) related to the Companies': (1) efforts to obtain a  
7 permit under Section 404 of the Clean Water Act; (2) cost considerations developed in  
8 the Section 404 permit process; and (3) the Companies' current beneficial use efforts,  
9 those material allegations have been addressed in my testimony above and/or in the  
10 testimony of other of the Companies' witnesses.

11 **Q. Does this conclude your testimony?**

12 A. Yes it does.

VERIFICATION

COMMONWEALTH OF KENTUCKY )  
 ) SS:  
COUNTY OF JEFFERSON )

The undersigned, **Gary H. Revlett**, being duly sworn, deposes and says he is the Director, Environmental Affairs for LG&E and KU Services Company, and that he has personal knowledge of the matters set forth in the foregoing testimony, and the answers contained therein are true and correct to the best of his information, knowledge and belief.

  
\_\_\_\_\_  
Gary H. Revlett

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 5th day of August 2015.

  
\_\_\_\_\_  
Notary Public (SEAL)

My Commission Expires:  
**JUDY SCHOOLER**  
**Notary Public, State at Large, KY**  
**My commission expires July 11, 2013**  
**Notary ID # 512743**

## **APPENDIX A**

### **Gary H. Revlett**

Director, Environmental Affairs  
LG&E and KU Services Company  
220 West Main Street  
Louisville, Kentucky 40202  
(502) 627-4621

### **Education**

University of Louisville, Ph.D. Analytical/Environmental Chemistry - May 1976

Murray State University, B.S. Chemistry - June 1971

OSHA Hazardous Waste Worker Training and 8-hour Refresher Courses

### **Previous Positions**

E.ON U.S. Services Inc.

2006-2010 - Air Manager - Environmental Affairs

Tetra Tech EMI, Louisville, Kentucky

2005-2006 - Senior Air Quality Manager

Kenvirons, Inc., Frankfort, Kentucky

1994-2005 - Vice President and Treasurer  
(Director of Air Services and Laboratory Services)

1985-1994 - Associate  
(Manager of Testing and Air Services)

1978- 1984 - Senior Environmental Scientist  
(Manager of Emission Testing and Air Modeling)

Kentucky Division of Pollution Control, Frankfort, KY

1976-1977 - Principal Chemist - Air Modeling Team

**Revlett, Gary**

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**From:** Scott, R. Bruce (EEC) <Bruce.Scott@ky.gov>  
**Sent:** Monday, July 27, 2015 11:02 AM  
**To:** Revlett, Gary  
**Cc:** Hatton, Tony (EEC); Anderson, Danny J (EEC); Maybriar, Jon (EEC); Hubbard, Tim (EEC)  
**Subject:** Sterling Ventures LLC Assertion Of KDWM Determination Of Beneficial Reuse  
**Attachments:** Sterling Ventures References to KDWM Beneficial Reuse Determination.pdf

Mr. Revlett,

I was out of the office on Friday, so I am just now getting to this request.

In response to your inquiry below, the agency has not taken any official position regarding the viability of whether Coal Combustion Residuals (CCR) material generated by the LG&E Trimble station could be beneficially reused at the Sterling Ventures operation as it relates to the April 17, 2015 USEPA final federal rule for the management of Coal Combustion Residuals (CCR) from electric utilities.

Sterling Ventures (AI 1461, Gallatin County, KY) is currently permitted by the Kentucky Division of Waste Management under the existing state (Kentucky) permitting program for beneficial reuse (Registered Permit by Rule – RPBR) to receive FGD Gypsum from the KU Ghent Power Station in Ghent, KY. The operation is not currently permitted under the new USEPA CCR regulatory program.

While Kentucky is currently internally in the process of seeking to revise its Special Waste regulations to reflect the new federal EPA CCR rule, those regulations have yet to be formally filed with LRC and as such the Commonwealth does not at this time have permitting jurisdiction to implement the federal rules. In addition, as finalized by USEPA the federal rules are by EPA's definition "self-implementing", meaning that utilities are currently obligated to interpret and implement the regulations upon themselves with third party oversight.

If you have any additional questions, please let me know at your convenience.

Thanks,  
Bruce Scott  
KY DEP - Commissioner

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**From:** Revlett, Gary [mailto:Gary.Revlett@lge-ku.com]  
**Sent:** Thursday, July 23, 2015 3:37 PM  
**To:** Hatton, Tony (EEC)  
**Cc:** Scott, R. Bruce (EEC)  
**Subject:** Sterling Ventures LLC Assertion Of KDWM Determination Of Beneficial Reuse

Tony,

As you may know, Sterling Ventures has filed a complaint with the Public Service Commission in which they contend that their underground limestone mine should be utilized for management of CCRs generated by our Trimble County plant in lieu of the proposed on-site landfill. Sterling has also raised the same issue with the Corps of Engineers in the course of Section 404 permitting for the landfill. In various representations to the Corps and PSC, Sterling has stated or at least strongly implied that KDWM has made a determination that placement of CCRs in their mine would

constitute beneficial use under EPA's new CCR Rule and would not be subject to CCR landfill requirements.

In a June 25, 2015 letter to the Corps, Sterling states that DWM "assured Sterling that the new CCR regulations would have no effect on Sterling Beneficial Reuse Permit" and suggests they contact Mr. Hendricks and Ms. Green of your staff regarding their analysis of how the new CCR Rule would impact the ability of Sterling to beneficially use Trimble County's CCR. See below.

In the pending PSC proceedings relating to Sterling's complaint, the PSC queried whether Sterling's statement "In addition, according to KDWM, it would require only a permit modification to the Sterling Ventures Special Waste Facility permit in order to allow for storage of CCR generated at the Trimble County Generating Station" is accurate in light of the final CCR Rule. In its July 16, 2015 response, Sterling stated:

"Sterling's had discussion with KDWM staff about the ability to obtain a modification to beneficially reuse Trimble County's CCR both before and after the effective date of the new CCR regulations. It was staff's opinion that the CCR regulations as finally adopted would not prohibit Sterling from amending its existing permit to allow Sterling to beneficially reuse Trimble County's CCR, barring a material change to the TCLP and/or SPLP as originally filed." See response to Question 2(b) below.

In response to another query by the PSC, Sterling responded that "Sterling has had a number of phone conversations with Mr. Hendricks since the publication of the EPA final CCR regulation and also meet (sic) with Ms. Green and Mr. Hendricks in June of this year to confirm that KDWM believed that the new CCR regulations would not affect Sterling's ability to beneficially reuse CCR in its limestone mine." See response to Question 9 below.

We believe that KDWM has only made representations regarding the status of Sterling's Kentucky Registered Permit-By-Rule for Beneficial Reuse and has not purported to make any determinations regarding whether Sterling's proposed operation would constitute beneficial use under EPA's new CCR rule. Whether intentional or not, Sterling representations to the Corps and PSC may result in substantial confusion regarding exactly what determinations KDWM has made in this matter. We strongly urge KDWM to clear up this confusion once and for all by clarifying that it has no authority for administering the new EPA CCR Rule in Kentucky and confirming that KDWM has made no determination as to whether Sterling's proposed operation would constitute beneficial use under the provisions of the new rule.

LG&E has reviewed Sterling Ventures' claims that placement of all CCR generated at the Trimble Station in its underground mine meets the four criteria of beneficial use under the new CCR Rule, and we strongly disagrees with Sterling Ventures' assertions. LG&E has expressed that position on the beneficial use issue in the PSC and Army Corps proceedings. Unless the Division provides a clear, written statement of what determinations it has made in this matter, it is likely that its position will continue to be mischaracterized or misrepresented in the pending proceedings before the PSC and the Corps.

Thanks You for Your Consideration,  
Gary

**Gary H. Revlett, Director**  
**Environmental Affairs**

**LG&E and KU Energy LLC**

\*\*\*\*\*

**Wk: (502) 627-4621**

**Cell: (502) 409-1299**

**Fax: (502) 627-2550**

[gary.revlett@lge-ku.com](mailto:gary.revlett@lge-ku.com)

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June 25, 2015

**Via Electronic Mail**

U.S. Army Corps of Engineers,  
Louisville District  
ATTN: Kimberly J. Simpson  
Senior Project Manager, South  
Regulatory Branch, Operations Division,  
OP-FS, Room 752  
600 Dr. Martin Luther King Jr. Place  
Louisville, KY 40202-2239.  
Email: Kimberly.J.Simpson@usace.army.mil

RE: Trimble County Generating Station Landfill Permit, Project ID No. LRL-2010-711

Dear Ms. Simpson:

I wanted to update you on recent developments with respect to the information letter Sterling Ventures, LLC submitted to you by letter dated June 4, 2015. The Kentucky Public Service Commission has consolidated the Complaint Sterling filed and the Application for Declaratory Order that LG&E/KU filed with respect to the Trimble County Landfill Project. You can follow factual discovery, testimony and pleadings in that case by using the following link:

[http://psc.ky.gov/PSC\\_WebNet/ViewCaseFilings.aspx?Case=2015-00194](http://psc.ky.gov/PSC_WebNet/ViewCaseFilings.aspx?Case=2015-00194)

The parties attended an informal conference in this case on June 19, 2015 to discuss issues and a procedural schedule for moving forward. The schedule will be formalized in an Order from the Commission and accessible at the above link.

Based on statements by LG&E/KU at the informal conference regarding current CCR capacity at the Trimble County Station, time is of the essence with respect to a decision from the Commission, the Corps and potentially the EPA as to whether the Trimble Landfill is LEDPA. Critical to that decision is an initial determination as to whether the new CCR regulations prevent Sterling from beneficially using or otherwise placing CCR in its underground limestone mine.

Sterling currently has a Registered Permit by Rule (the "Beneficial Reuse Permit") issued by the Kentucky Division of Solid Waste ("KDSW") to beneficially reuse gypsum from KU's Ghent Generating Station. Sterling's Permit is based on using CCR to eliminate air voids in

June 25, 2015  
Page 3

(4) *When unencapsulated use of CCR involving placement on the land of 12,400 tons or more in non-roadway applications, the user must demonstrate and keep records, and provide such documentation upon request, that environmental releases to groundwater, surface water, soil and air are comparable to or lower than those from analogous products made without CCR, or that environmental releases to groundwater, surface water, soil and air will be at or below relevant regulatory and health-based benchmarks for human and ecological receptors during use.*

As indicated above, given the geology of the mine and the strata between the surface and the mining levels, once the CCR is placed in the mine, there will be no environmental releases possible to the groundwater, surface water, soil or air.

Sterling has met with the KDSW concerning the effect, if any, of the new CCR regulations on Sterling's Beneficial Reuse Permit, and Sterling's ability to place or beneficially use CCR in the mine. KDSW assured Sterling that the new CCR regulations would have no effect on Sterling's Beneficial Reuse Permit. Sterling is also filing for a modification of the Beneficial Reuse Permit to allow Sterling to use fly ash and bottom ash from Trimble County, in addition to gypsum from the Ghent Generating Station, to fill air voids for ventilation purposes. Again, KDSW has indicated that the new CCR regulations would not prevent Sterling obtaining that modification.

With respect to the first beneficial use criteria above - functional benefit - the background discussion of the CCR regulation as published in the Federal Register provides that: "To the extent that a state regulatory program has determined that a particular use provides a functional benefit, this may serve as evidence that this criteria has been met."<sup>1</sup>

In addition, with respect to the second beneficial reuse criteria above, the background discussion notes that: "Here as well, potential users of CCR may choose to rely on a state determination to provide evidence that this criterion has been met."<sup>2</sup>

However, despite the above, in its Application for Declaratory Order to the Commission, LG&E/KU made the following statement: "The Trimble County Landfill remains the most economical means of disposing of the CCR the Trimble County coal-fired units will produce"<sup>3</sup>. This statement is footnoted with the additional following comment:

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<sup>1</sup> *Federal Register*/Vol. 80, No. 74 / Friday, April 17, 2015 / Rules and Regulations at 21349.

<sup>2</sup> *Id.*

<sup>3</sup> *In the matter of Joint Application of Louisville Gas & Electric Company and Kentucky Utilities Company for Declaratory Order Concerning Construction of the Trimble County Landfill and Related Cost Recovery*, KU Case No. 2015-00194, LGE-KU Joint Application dated May 22, 2015 at 14.

STERLING VENTURES, LLC  
CASE NO. 2015-00194

Response to Data Request of Staff of the  
Kentucky Public Service Commission  
Dated July 2, 2015

Question No. 2

Responding Witness: John Walters

Q-2 Refer to the Complaint, page 17, which states: "In addition, according to KDWM, it would require only a permit modification to the Sterling Ventures Special Waste Facility permit in order to allow for storage of CCR generated at the Trimble County Generating Station."

a. State if Sterling Ventures has obtained this permit modification. If Sterling Ventures has not obtained the permit modification, explain why it has not done so, and state when Sterling Ventures anticipates being able to obtain the modification.

b. State whether this statement is accurate in light of the final rule on Disposal of Coal Combustion Residuals ("CCR") from Electric Utilities, 80 Fed. Reg. (Apr. 17, 2015) (amending 40 CFR Parts 257 and 261) ("CCR Rule")

c. Explain if there is a date when the existing special wastes permit becomes null and void.

A-2 a. Sterling has not yet obtained this Permit. Based upon discussions with the KDWM, in order to obtain the Permit, Sterling would need the toxicity characteristic leaching procedure (TCLP) and/or the Synthetic Precipitation Leach Procedure (SPLP) test results for Trimble County CCR in order to obtain the amended Permit allowing Trimble CCR to be beneficially reused in the mine. As KU/LG&E has not provided Sterling the opportunity to meet or obtain any information with respect to Sterling's proposal, KDWM suggested that Sterling wait until KU/LG&E filed an amended application for the Trimble Landfill permit with the KDWM, and then obtain the TCLP and the SPLP in an open records act request of that file.

Sterling learned that KU/LG&E had filed its revised permit application the in the first week of July, and requested a copy of the file in an open records act request on July 8, 2015. A copy of the file was received on July 14, 2015. Sterling plans to file the amendment with Trimble County's CCR TCLP and SPCP analyses the week of July 20, 2015.

b. Sterling's had discussion with KDWM staff about the ability to obtain a modification to beneficially reuse Trimble County's CCR both before and after the effective date of the new CCR regulations. It was staff's position that the CCR regulations as finally adopted would not prohibit Sterling from amending its existing permit to allow Sterling to beneficially reuse Trimble County's CCR, barring a material change to the TCLP and/or SPLP as originally filed.

- c. No. The Beneficial Reuse Permit is issued for the life of the facility.

CASE NO. 2015-00194

Response to Data Request of Staff of the  
Kentucky Public Service Commission  
Dated July 2, 2015  
Question No. 9  
Responding Witness: John Walters

Q-9 Refer to the Executive Summary, at page 2 of the handout entitled "Evaluation of Trimble County Coal Combustion Residual Storage Options-2015" from the June 19, 2015 Informal Conference. Louisville Gas and Electric Company and Kentucky Utilities Company state that based on their understanding of the CCR Rule, the Sterling Ventures mine site would not likely be permitted to store CCRs. State whether Sterling Ventures agrees with this statement and, if not, explain the reasons for the disagreement.

A-9 Sterling disagrees with KU and LG&E's assessment of the impact of the new CCR regulations on the ability of Sterling to beneficially use CCR in its underground mine.

In connection with Sterling's original Application for the Beneficial Reuse Permit in 2010, Todd Hendricks, KDSW's geologist, and Robin Green, KDSW's Permit Administration Supervisor, visited Sterling's mine and confirmed that CCR placed in the mine would have no contact with surface water, no contact with ground water, no contact with soils, no fugitive dust emissions and no leachate to monitor.

Sterling has had a number of phone conversations with Mr. Hendricks since the publication of the EPA final CCR regulation and also meet with Ms. Greene and Mr. Hendricks in June of this year to confirm that KDWM believed that the new CCR regulations would not affect Sterling's ability to beneficially reuse CCR in its limestone mine.

As shown in the following analysis of the new regulations, the proposed use of CCR in the underground mine meets the conditions to qualify as beneficial use outlined in the new CCR regulations (40 CFR §257.53.)

(1) *The CCR must provide a functional benefit.*

Eliminating air voids in the mine provides the functional benefit of effectively and efficiently directing air to working areas of the mine.

(2) *The CCR must substitute for the use of a virgin material, conserving natural resources that would otherwise need to be obtained through practices, such as extraction.*

The CCR substitutes for concrete, steel and other materials used to construct air stoppings in the mine, as well as substantially reducing the amount of electricity required to run ventilation fans to move air in the mine, thereby reducing the environmental consequences of additional electric generation.

(3) The use of the CCR must meet relevant product specifications, regulatory standards or design standards when available, and when such standards are not available, the CCR is not used in excess quantities.

There are no product specifications relevant to Sterling's beneficial use of CCR. Sterling's requirement to maintain an active mining operation prevents excess quantities of CCR beyond what is necessary to fill voids in mined out, abandoned areas of the mine.

(4) When unencapsulated use of CCR involving placement on the land of 12,400 tons or more in non-roadway applications, the user must demonstrate and keep records, and provide such documentation upon request, that environmental releases to groundwater, surface water, soil and air are comparable to or lower than those from analogous products made without CCR, or that environmental releases to groundwater, surface water, soil and air will be at or below relevant regulatory and health-based benchmarks for human and ecological receptors during use.

Given the geology of the mine and the strata between the surface and the mining levels, once the CCR is placed in the mine, there will be no environmental contact possible with groundwater, surface water, soil or air.

With respect to the first beneficial use criteria above - functional benefit - the preamble of the new CCR regulations as published in the Federal Register provides that: "To the extent that a state regulatory program has determined that a particular use provides a functional benefit, this may serve as evidence that this criteria has been met."<sup>1</sup>

In addition, with respect to the second beneficial reuse criteria above, the preamble also notes that: "Here as well, potential users of CCR may choose to rely on a state determination to provide evidence that this criterion has been met."<sup>2</sup>

The obvious intent of the EPA was to have the applicable state regulatory agencies be a critical component of the determination of qualifying beneficial reuse. **KDSW assured Sterling that the new CCR regulations would have no effect on Sterling's Beneficial Reuse Permit.**

Courts will defer to the state drafting the terms of an environmental permit in resolving questions of ambiguity. *Natural Res. Def. Council, Inc. v. Texaco Ref. & Mktg., Inc.*, 20 F. Supp. 2d 700, 709 (D. Del. 1998) ("In construing a permit provision, the Court should defer to the interpretation of the agency charged with enforcement of the terms."); *see also Cal. Pub. Interest Research Grp. v. Shell Oil Co.*, 840 F. Supp. 712, 716 (N.D. Cal. 1993) (An NPDES permit "is a legally enforceable rule drafted by a regulatory agency. As such, it is akin to any agency regulation or rule.") and *California Pub. Interest Research Group v. Shell Oil Co.*, 840 F. Supp. 712, 716 (N.D. Cal. 1993) ("In construing NPDES permits, courts often defer to the agency that

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<sup>1</sup> *Federal Register*/Vol. 80, No. 74 / Friday, April 17, 2015 / Rules and Regulations at 21349.

<sup>2</sup> *Id.*

drafted the permit, consistent with established rules of statutory construction that give deference to agency interpretations where they are reasonable.”).

The above cases deal with permits issued by states with authorization under the National Pollutant Discharge Elimination System (NPDES) permit program, which controls water pollution by regulating point sources that discharge pollutants into waters of the United States. The NPDES program’s purpose, authorization and enforcement structure is substantially similar to that created by the EPA under the new CCR regulations.

Given that the new CCR regulations specifically look to the states issuing beneficial use permits as evidence of compliance with the beneficial use requirements, and the courts defer to a state’s technical expertise and interpretations of permit conditions, Sterling is confident in a KDWM determination that Sterling’s can modify its existing beneficial Reuse Permit to allow the beneficial use of CCR from Trimble County.

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

**In the Matter of:**

<b>INVESTIGATION OF KENTUCKY</b>	)	
<b>UTILITIES COMPANY'S AND LOUISVILLE</b>	)	<b>CASE NO. 2015-00194</b>
<b>GAS AND ELECTRIC COMPANY'S</b>	)	
<b>RESPECTIVE NEED FOR AND COST OF</b>	)	
<b>MULTIPHASE LANDFILLS AT THE</b>	)	
<b>TRIMBLE COUNTY AND GHENT</b>	)	
<b>GENERATING STATIONS</b>	)	

**TESTIMONY OF**  
**DAVID S. SINCLAIR**  
**VICE PRESIDENT, ENERGY SUPPLY AND ANALYSIS**  
**KENTUCKY UTILITIES COMPANY AND**  
**LOUISVILLE GAS AND ELECTRIC COMPANY**

**Filed: August 6, 2015**

1 **Q. Please state your name, position and business address.**

2 A. My name is David S. Sinclair. I am Vice President, Energy Supply and Analysis of  
3 Kentucky Utilities Company (“KU”) and Louisville Gas and Electric Company  
4 (“LG&E”) and an employee of LG&E and KU Energy LLC, which provides services  
5 to LG&E and KU (collectively “Companies”). My business address is 220 West Main  
6 Street, Louisville, Kentucky 40202.

7 **Q. Please describe your educational and professional background.**

8 A. A statement of my professional history and education is attached to this testimony as  
9 Appendix A.

10 **Q. Have you previously testified this Commission?**

11 A. Yes. I have testified numerous times before the Commission.<sup>1</sup> Most recently, I  
12 provided testimony in the Companies’ 2014 base-rate cases,<sup>2</sup> as well as in support of  
13 the Companies’ application in Case No. 2015-00156.<sup>3</sup> The Commission incorporated  
14 into the record of this proceeding my testimony in Case No. 2015-00156.<sup>4</sup>

15 **Q. What are the purposes of your testimony?**

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<sup>1</sup> See, e.g., *In the Matter of: Investigation into the Membership of Louisville Gas and Electric Company and Kentucky Utilities Company in the Midwest Independent Transmission System Operator*, Case No. 2003-00266; *In the Matter of: Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for a Certificate of Public Convenience and Necessity and a Site Compatibility Certificate for the Construction of a Combined Cycle Combustion Turbine at the Cane Run Generating Station and the Purchase of Existing Simple Cycle Combustion Turbine Facilities From Bluegrass Generation Company, LLC in La Grange, Kentucky*, Case No. 2011-00375; and *In the Matter of: Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for a Certificate of Public Convenience and Necessity for the Construction of a Combined Cycle Combustion Turbine at the Green River Generating Station and a Solar Photovoltaic Facility at the E.W. Brown Generating Station*, Case No. 2014-00002,

<sup>2</sup> *In the Matter of: Application of Kentucky Utilities Company for an Adjustment of Its Electric Rates*, Case No. 2014-00371; *In the Matter of: Application of Louisville Gas and Electric Company for an Adjustment of Its Electric and Gas Rates*, Case No. 2014-00372.

<sup>3</sup> *In the Matter of: Application of Louisville Gas and Electric Company and Kentucky Utilities Company for Declaratory Order Concerning Construction of the Trimble County Landfill and Related Cost Recovery*, Case No. 2015-00156.

<sup>4</sup> *In the Matter of: Investigation of Kentucky Utilities Company’s and Louisville Gas and Electric Company’s Respective Need for and Cost of Multiphase Landfills at the Trimble County and Ghent Generating Stations*, Case No. 2015-00194, Order (June 16, 2015).

1 A. The purposes of my testimony are (1) to refute Sterling Ventures’ (“Sterling”) assertion  
2 that disposing of a portion of the coal combustion residuals (“CCR”) produced by the  
3 coal-fired units at the Companies’ Ghent Generating Station in Sterling’s limestone  
4 mine near Verona, Kentucky would have been less costly than managing the station’s  
5 CCR with the existing CCR treatment facility and landfill, (2) to demonstrate that  
6 building the proposed CCR treatment facility and landfill at the Trimble County station  
7 remains the preferred option for managing the station’s CCR, and (3) to explain the  
8 consequences of delaying the construction of the Trimble County CCR treatment  
9 facility and landfill.

10 **Ghent CCR Disposal**

11 **Q. Did you or your staff evaluate any offers from Sterling to dispose of gypsum from**  
12 **the Ghent coal-fired units in its limestone mine?**

13 A. Yes. On September 13, 2011, Alex Boone of Sterling sent an offer to Jeff Joyce and  
14 Caryl Pfeiffer entitled “FGD Gypsum Disposal – Ghent Generating Station”  
15 (“September 2011 Offer”).<sup>5</sup> On January 19, 2012, Sterling updated this offer in an  
16 email entitled “Sterling Ventures Gypsum Proposal” from John Walters to Jeff Joyce  
17 and Caryl Pfeiffer (“Updated Offer”).<sup>6</sup>

18 **Q. Please describe the September 2011 Offer.**

19 A. In the September 2011 Offer, Sterling proposed to dispose of all gypsum from the  
20 Ghent Station (net of sales to CertainTeed) in its limestone mine for \$10.95/ton. Per  
21 the offer, Sterling would have excavated, loaded, and hauled gypsum from the existing

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<sup>5</sup> See Attachment to LG&E-KU Response to Sterling Ventures Question No. 1-17(d) at 82 *et seq.* (July 16, 2015).

<sup>6</sup> See Attachment to LG&E-KU Response to Sterling Ventures Question No. 1-17(d) at 696 *et seq.* (July 16, 2015); Complaint Exh. H.

1 gypsum stack at the Ghent station to its limestone mine near Verona, Kentucky. In  
2 doing this, Sterling claimed that the Company could defer the need for subsequent  
3 landfill phases and avoid approximately \$53 million in capital costs for the dry gypsum  
4 handling system, gypsum fines project, and gypsum dewatering facility. In addition,  
5 by eliminating the need to dispose of gypsum altogether, Sterling claimed that the  
6 Companies could realize further capital savings by reverting to a CCR disposal  
7 alternative from the 2009 ECR filing that included a smaller landfill located closer to  
8 the Ghent station (“Alternative Landfill Site”). Finally, in addition to its proposal for  
9 disposing of gypsum, Sterling also proposed to deliver limestone to the Ghent station  
10 for \$6.50/ton.

11 **Q. What did the Companies’ 2012 analysis of the September 2011 Offer show?**

12 A. The Companies compared the revenue requirements of the September 2011 Offer to  
13 those of continuing with the proposed Ghent landfill. First, due to the costs and risks  
14 associated with operating the gypsum stack, Sterling’s assumption that the Companies  
15 would continue operating the gypsum stack was incorrect. Therefore, contrary to  
16 Sterling’s claim, Sterling would not be able to take gypsum from the existing gypsum  
17 stack and the Company would not be able to avoid the \$53 million in capital costs for  
18 the dry gypsum handling system, gypsum fines project, and gypsum dewatering  
19 facility. Second, while Sterling’s September 2011 Offer would have deferred the need  
20 for phase 2 of the landfill, our analysis showed that the need could be deferred from  
21 2022 to 2028, not from 2018 to 2030 as they suggested. Finally, the September 2011  
22 Offer suggested the Companies could reduce revenue requirements by moving to the

1 Alternative Landfill Site. But this option was not viewed as viable because it would  
2 have required new environmental permits and delayed the project by two years.

3 Table 1 summarizes the conclusions of the Companies' analysis, and shows that  
4 the net present value of revenue requirements ("net PVRR" or "NPVRR") of the Ghent  
5 landfill is \$93 million less than the Sterling offer. The capital cost savings in the  
6 Sterling offer associated with deferring or eliminating the need for landfill phases are  
7 more than offset by Sterling's cost to haul gypsum from the station and dispose of it in  
8 their mine.

9 **Table 1 – Analysis of Sterling's September 2011 Offer**

	<b>Landfill Only</b>	<b>Landfill w/ Sterling Ventures Offer</b>
Net Present Value Revenue Requirements (NPVRR, \$Millions, \$2012)		
Capital	348	297
O&M	169	313
Total	517	610
Levelized NPVRR/CY (Dollars)	\$24.51	\$27.63

10

11 **Q. What were the key changes in Sterling's Updated Offer?**

12 A. The Updated Offer reduced the cost to dispose of gypsum from Ghent in Sterling's  
13 limestone mine from \$10.95 per ton to \$10.50 per ton (in 2013 dollars, including  
14 transportation cost from Ghent to the mine).<sup>7</sup> In addition, Sterling increased the cost  
15 of limestone delivered to Ghent from \$6.50 per ton to \$7.00 per ton.<sup>8</sup>

16 **Q. Did you evaluate the Updated Offer?**

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<sup>7</sup> See Attachment to LG&E-KU Response to Sterling Ventures Question No. 1-17(d) at 699 (July 16, 2015); Complaint Exh. H at 2.

<sup>8</sup> See Attachment to LG&E-KU Response to Sterling Ventures Question No. 1-17(d) at 700 (July 16, 2015); Complaint Exh. H at 3.

1 A. Yes, but we did not perform a formal PVRR analysis because the \$0.45 per ton  
2 (approximately \$0.53 per CY) change in the disposal fee was insignificant compared  
3 to the difference in the cost per cubic yard for each alternative shown in Table 1.

4 **Q. In addition to the financial assumptions, were there other assumptions implied in**  
5 **the analysis regarding the operations of the Sterling offers?**

6 A. Yes. The Companies' analysis made assumptions that were largely favorable to  
7 Sterling's Ghent proposals. For example, the analysis assumed that the Sterling mine  
8 would have adequate disposal capacity for the entire study life, when in fact, as the  
9 testimony of John N. Voyles, Jr. notes, it is far from certain that the mine will have  
10 adequate disposal capacity as needed. The analysis further assumed that there would  
11 be no environmental constraints on Sterling's ability to dispose of Ghent's gypsum,  
12 notwithstanding that, as the testimony of Gary H. Revlett shows, the U.S.  
13 Environmental Protection Agency's recently finalized CCR rule will compromise  
14 Sterling's ability to dispose of CCR in its mine, and certainly to do so at the costs  
15 Sterling has quoted to the Companies to date. The analysis further assumed there would  
16 not be significant transportation interruptions or issues at the mine that might prevent  
17 CCR being disposed of there for an appreciable time, notwithstanding the serious  
18 feasibility issues discussed in testimony of Mr. Voyles. Finally, the analysis assumed  
19 Sterling's mine would be in business the entire 40 years of the study period, a  
20 proposition that is far from certain for a mine that has operated just over 11 years and  
21 is completely dependent upon future market conditions.

22 **Q. The Sterling complaint makes much of the increased final capital cost of the Ghent**  
23 **landfill relative to the preliminary cost estimate included in the Companies' 2009**

1           **ECR applications. Did the Companies’ analysis account for this increased capital**  
2           **cost?**

3    A.    Yes. The Sterling complaint notes that the final capital cost of the Ghent landfill was  
4           \$341 million.<sup>9</sup> The capital cost used to calculate the results shown in Table 1 was \$303  
5           million, which was the most updated estimate at the time the analysis was performed.  
6           Obviously, because the project wasn’t completed until 2014, the Companies could not  
7           have used the final cost in their analysis of Sterling’s proposals. Nonetheless, the  
8           Companies’ analysis discussed above showed that the Ghent landfill had an NPVRR  
9           \$93 million less than the September 2011 Offer. Therefore, the \$38 million of capital  
10          cost increase Sterling cites would not have changed the conclusion of the NPVRR  
11          analysis, namely that the Ghent landfill has a lower NPVRR—and therefore a lower  
12          cost to customers—than Sterling’s September 2011 Offer.

13   **Q.    What is your recommendation concerning Sterling’s request that the Commission**  
14   **issue an order capping the Companies’ cost recovery related to the Ghent landfill?**

15    A.    I respectfully recommend that the Commission deny Sterling’s request. As shown  
16          above, the Companies carefully and completely analyzed Sterling’s September 2011  
17          Offer and determined based on sound and realistic assumptions that building the Ghent  
18          landfill was the least cost alternative. The Companies’ decision to continue with the  
19          Commission-approved Ghent landfill project was prudent. Therefore, I see no reason  
20          for the Commission to limit the Companies’ cost recovery concerning the Ghent  
21          landfill.

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<sup>9</sup> Complaint at paragraph 10.

**Trimble County CCR Disposal**

1  
2 **Q. What analyses have you done to evaluate alternatives to the Trimble County**  
3 **landfill?**

4 A. In February 2015, personnel under my supervision conducted a thorough PVRR  
5 analysis to compare possible disposal of Trimble County’s CCR at Sterling’s mine to  
6 building the proposed and Commission-approved Trimble County landfill.<sup>10</sup> In May  
7 2015, my team compared the cost of the proposed landfill to the cost of retiring the  
8 Trimble County coal-fired units and replacing the capacity with new natural gas  
9 combined cycle units. Before this analysis was completed, the retirement alternative  
10 was the only alternative that had not been evaluated. Finally, at the request of the  
11 Commission, my team recently updated the Companies’ comparison of the Sterling  
12 proposal and the Trimble County landfill in response to the Commission Staff’s First  
13 Data Request No. 18 (“PSC 1-18”) to reflect the most current cost estimates.

14 **Q. Please summarize the results of those analyses.**

15 A. The results of the February 2015 analysis are summarized in Table 2 below.<sup>11</sup> In this  
16 analysis, the Sterling proposal and proposed Trimble County landfill were evaluated  
17 over multiple CCR disposal scenarios. Over the 30-year analysis period, the  
18 Companies’ share of the costs associated with building the Trimble County landfill was

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<sup>10</sup> Companies’ Responses to Commission Staff First DR No. 4(a) (July 16, 2015). Study also attached to Commission Staff’s Informal Conference Memorandum (June 24, 2015). The Companies first presented the findings of this analysis during their February 2015 presentation to the Commission Staff concerning the status of the Trimble County landfill, though in that presentation the Sterling option was referred to generically as offsite disposal. See *In the Matter of: Application of Louisville Gas and Electric Company and Kentucky Utilities Company for Declaratory Order Concerning Construction of the Trimble County Landfill and Related Cost Recovery*, Case No. 2015-00156, Application Exhibit 4 at 68 (May 22, 2015).

<sup>11</sup> Typically, the Companies present PVRR results based on their 75 percent ownership share of the Trimble County coal units, but the results of the February 2015 analysis reflected 100 percent of the project costs. Table 2 presents the results on both bases so that the February 2015 results are more readily comparable to the results of the analysis provided in response to PSC 1-18.

1 \$116 million to \$163 million less than disposing of Trimble County’s CCR in Sterling’s  
 2 mine (on a PVRR basis using 2014 dollars):<sup>12</sup>

3 **Table 2 – February 2015 Analysis Results, All Scenarios (30-year study period)**

CCR Disposal Scenarios	CCRs Disposed of (MCY)	Present Value Revenue Requirement (\$2014, 2015-2044, \$M)					
		100% of Project			Companies’ 75% Ownership Share		
		Onsite	Sterling	Diff (Onsite less Sterling)	Onsite	Sterling	Diff (Onsite less Sterling)
High Generation; No Beneficial Reuse	32.7	637	854	(217)	478	641	(163)
High Generation; Beneficial Reuse	28.2	614	811	(197)	461	608	(148)
Base Generation; No Beneficial Reuse	26.0	614	795	(181)	461	596	(136)
Base Generation; Beneficial Reuse	21.5	589	752	(164)	442	564	(122)
Low Generation; No Beneficial Reuse	21.3	595	754	(159)	446	566	(119)
Low Generation; Beneficial Reuse	16.8	556	711	(156)	417	533	(116)

4  
 5 In the Companies’ May 2015 analysis, the landfill and retirement alternatives  
 6 were evaluated under three gas price scenarios with limits on CO<sub>2</sub> emissions consistent  
 7 with the EPA’s 2014 Clean Power Plan proposal. The results of the May 2015 analysis  
 8 are summarized in Table 3 below. The analysis showed that the landfill alternative is  
 9 lower cost than the retirement alternative in all gas price scenarios. The PVRR  
 10 difference between the two alternatives ranges from \$781 million to \$1.5 billion:

<sup>12</sup> Study attached to Commission Staff’s Informal Conference Memorandum at 3 (June 24, 2015).

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**Table 3 – May 2015 Analysis Results (Reflecting Companies’ 75% Ownership Share, PVRR, 2015-2044, \$2015, \$M)**

Gas	Alt	Prod Cost	Capital	Fixed O&M	Firm Gas Transport	Landfill	Grand Total	Retire or Landfill	Diff. (Landfill less Retire)
Low	Landfill	20,142	1,546	594	122	442	22,845	Landfill	(781)
	Retire	20,473	2,394	351	344	63	23,625		
Mid	Landfill	21,430	1,884	625	122	443	24,503	Landfill	(1,137)
	Retire	22,019	2,862	379	319	62	25,641		
High	Landfill	21,792	2,885	746	94	442	25,959	Landfill	(1,516)
	Retire	22,991	3,631	480	314	60	27,476		

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In the analysis provided in response to PSC 1-18, the Sterling offer was evaluated with very conservative capital cost estimates over the same fuel consumption and beneficial reuse scenarios considered in the May 2015 analysis. In total, capital costs for the Sterling proposal were reduced by approximately \$22 million. In addition, to be consistent with Exhibit S to Sterling’s Complaint, Sterling’s tipping fee (\$10.15/ton) was modeled as a 2018 value instead of a 2013 value.

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A summary of PVRR differences between the two options is included in Table 4 below. Despite the reduction in capital costs and the favorable impact associated with the treatment of the tipping fee, the PVRR for the Sterling alternative is still \$49 to \$55 million unfavorable to the onsite alternative. Fixed and variable operating and maintenance costs for the Sterling alternative continue to be higher than the onsite alternative. These costs more than offset Sterling’s lower total capital costs.

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**Table 4 – PVRR Results (Reflecting Companies’ 75% Ownership Share, \$2014, \$Millions)**

<b>Fuel Consumption</b>	<b>Beneficial Reuse</b>	<b>Onsite Landfill PVRR</b>	<b>Sterling PVRR</b>	<b>PVRR Difference (Onsite Less Sterling)</b>
Low Gas-Base Load	None	445	498	(53)
	Current	415	464	(50)
Mid Gas-Base Load	None	445	498	(54)
	Current	416	465	(49)
High Gas-Base Load	None	445	500	(55)
	Current	415	467	(52)

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Compared to the Sterling alternative and retiring and replacing the capacity of the Trimble County coal units, continuing with the development of the proposed CCR treatment facility and landfill is the least-cost alternative across a wide range of fuel consumption and beneficial reuse scenarios.

7

8 **Q.**

**Please explain why the range of PVRR differences between the Sterling and landfill alternatives in the analysis provided in response to PSC 1-18 is much narrower than the range of PVRR differences in the February 2015 analysis.**

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Compared to the February 2015 analysis, the range of fuel consumption scenarios considered in the analysis provided in response to PSC 1-18 is much narrower. The fuel consumption scenarios in the February 2015 analysis were consistent with the scenarios considered in the Companies’ 2014 Integrated Resource Plan and reflected a greater level of uncertainty regarding the impact of future carbon regulations.

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As stated previously, in the analysis provided in response to PSC 1-18, the Sterling and landfill alternatives were evaluated over the same fuel consumption and beneficial reuse scenarios considered in the May 2015 analysis. In the May 2015 analysis, the Companies’ assumptions regarding carbon regulations were updated to

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1 include limits on CO<sub>2</sub> emissions consistent with EPA’s Clean Power Plan as originally  
2 proposed in the summer of 2014. This resulted in the variation in fuel consumption  
3 being primarily driven by the assumed level of natural gas prices. Because the Trimble  
4 County coal units are among the Companies’ most efficient coal units, fuel  
5 consumption for these units does not vary significantly over a range of natural gas  
6 prices.

7 **Q. In its Complaint, Sterling claims that the Companies are biasing their analysis by**  
8 **not considering large volumes of beneficial reuse. Is this true?**

9 A. No. As can be seen in Tables 2 and 4, the Sterling alternative has a higher PVRR than  
10 the landfill alternative—and is therefore unfavorable to customers—in all beneficial  
11 reuse scenarios. This result stems from the fact that capital expenditures in the Sterling  
12 alternative are higher than the landfill alternative through 2018. As a result, even in  
13 scenarios with large beneficial reuse volumes, the PVRR of the landfill alternative is  
14 favorable to the Sterling alternative.

15 **Q. Your analyses showed that the landfill was least-cost in all scenarios evaluated.**  
16 **How were various operating risks accounted for in the Trimble County landfill**  
17 **and Sterling alternatives, and what assumptions did the Companies’ analyses**  
18 **make?**

19 A. As with any operation, it is important to have contingency plans for various operating  
20 risks. For example, the CCR treatment facility in the landfill alternative has capacity  
21 for temporary CCR disposal so routine maintenance can be completed on the pipe  
22 conveyor. In addition, the landfill alternative includes a haul road alongside the pipe  
23 conveyor to accommodate the potential need for extended pipe conveyor maintenance.

1 Therefore, the revenue requirements of the landfill alternative fully reflect the  
2 necessary facilities required to address the operating risks that would otherwise disrupt  
3 the station's ability to continue generating electricity to service customer needs.

4 The additional handling facilities and hauling distances associated with the  
5 Sterling alternative create additional operating risks but the revenue requirements of  
6 the Sterling alternative do not reflect the necessary facilities required to address these  
7 risks. For example, the CCR treatment facility in the Sterling alternative does not have  
8 enough CCR disposal capacity to account for multi-week outages of barge loading or  
9 unloading facilities, multi-week outages of locks, disruptions at Sterling's site, or the  
10 unavailability of river transport due to flooding. None of these risks were quantified in  
11 the analysis of the Sterling alternative; as a result, the Companies' analyses are  
12 arguably too favorable to the Sterling alternative.

13 **Q. Are there any other risks associated with the Sterling alternative that were not**  
14 **quantified?**

15 A. Yes. First, the analysis assumed that the Sterling mine would have adequate disposal  
16 capacity for the entire study life, which is questionable. Second, the analysis assumed  
17 there would be no environmental constraints on Sterling's ability to dispose of CCR,  
18 which the Companies believe to be incorrect. Third, the analysis assumed Sterling's  
19 mine would remain open and in business through 2044.

20 **Q. Why didn't you attempt to quantify these risks?**

21 A. Appropriately addressing these risks would have further increased the cost of the  
22 Sterling alternative. Because the Sterling alternative was not a least-cost alternative

1 without considering these costs, there was no need to evaluate the cost of mitigating  
2 these risks.

3 **Q. If the Companies made so many assumptions favorable to Sterling, why does their**  
4 **analysis show that the Trimble County landfill is significantly more economical**  
5 **on a PVRR basis than disposing of CRR in Sterling’s mine?**

6 A. There are several reasons why the Companies’ proposed Trimble County landfill is  
7 more economical than CCR disposal in Sterling’s mine. First, in all scenarios evaluated  
8 (and particularly in scenarios with higher CCR disposal requirements), variable O&M  
9 costs for the Sterling alternative are significantly higher. Second, due to the need to  
10 operate barge loading and unloading facilities, fixed O&M costs for the Sterling  
11 alternative are also higher. Lastly, the landfill alternative has higher capital costs  
12 overall, but more capital is required by 2018 in the Sterling alternative. The need for  
13 more capital through 2018 reduces the advantage the Sterling alternative would  
14 otherwise have due to its lower capital requirements.

15 The capital costs for both alternatives as evaluated in response to PSC 1-18 are  
16 summarized in Table 5 below. In both alternatives, it is necessary to build a CCR  
17 treatment facility to prepare the CCR for disposal, which is the single largest capital  
18 cost item in both alternatives at \$138 million. There is at least one pipe conveyor and  
19 associated haul road in both alternatives: in the Sterling alternative, the conveyor runs  
20 to a barge-loading facility at Trimble County; in the landfill alternative, the conveyor  
21 runs to a truck loading station on the Trimble County Generating Station property at  
22 the edge of the landfill. Both conveyors and associated haul roads are assumed to be  
23 approximately the same cost, \$26 million (\$13 million for each conveyor plus \$13

1 million for each haul road). As Table 5 shows, these two items constitute a large  
 2 portion of the total capital cost of both alternatives:

3 **Table 5 – Capital Cost Comparison (Mid Gas Price, Base Load Fuel**  
 4 **Consumption, Current Beneficial Reuse, Reflecting Companies’ 75% Ownership**  
 5 **Share, \$2014, \$Million)**

Landfill Alternative		Sterling Alternative	
CCR Treatment	138	CCR Treatment	138
Pipe Conveyor	13	Pipe Conveyor	13
Haul Road	13	Haul Road	13
Landfill Phase 1	119	Barge Loading/Unloading	32
Landfill Phase 2	42	SV Pipe Conveyor/Haul Road	46
Landfill Phase 3	37	Site Preparation/ Permitting	23
Landfill Phase 4	14	Barge Purchase	6
Total	374	Total	271
Spent by 2018	246	Spent by 2018	271
Spent after 2018	128	Spent after 2018	0

6  
 7 As Table 5 indicates, the landfill will be constructed in phases as additional space is  
 8 needed to manage the station’s CCR. This explains why a significant portion of capital  
 9 for the landfill alternative is not needed until years after the landfill is initially  
 10 commissioned.

11 Table 6 summarizes the annual fixed operating and maintenance costs for the  
 12 Sterling and landfill alternatives. The distance between the Sterling site and the station  
 13 results in significant transportation costs, both fixed and variable, which contribute to  
 14 the unfavorability of the Sterling alternative. As Table 6 shows, the Sterling  
 15 alternative’s fixed annual O&M cost (\$2.5 million) is more than double the landfill  
 16 alternative’s fixed O&M cost (\$1.2 million).

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**Table 6 – Annual Fixed Operating and Maintenance Costs (\$2014, \$/year)<sup>13</sup>**

Onsite Alternative		Sterling Alternative	
Road Maintenance and Dust Control	420,000	Road Maintenance and Dust Control	390,000
Leachate System O&M	330,000	Fleeting for Barge Loading	485,000
Landfill Maintenance	460,000	Fleeting for Barge Unloading	970,000
		Barge Operating Cost	680,000
<b>Total</b>	<b>1,210,000</b>	<b>Total</b>	<b>2,525,000</b>

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The difference between the two alternatives' variable O&M costs is even more pronounced, with the Sterling alternative's variable O&M per ton of CCR (\$15.42 per ton) being more than seven times the landfill alternative's variable O&M per ton of CCR (\$1.59 to 1.98 per ton), largely driven by Sterling's \$10.15 per ton tipping fee (see Table 7). These O&M differences over the study period, even on a PVRR basis, dwarf the capital cost differences between the two options.

**Table 7 - Variable Operating and Maintenance Cost (\$2014, \$/Ton)**

Onsite Alternative		Sterling Alternative	
Pipe Conveyor ("PC") Operating Costs	0.04	First Pipe Conveyor	0.04
Truck Hauling to Landfill (0.5 Miles)	0.99	Barge Loading	0.68
Truck Hauling to Landfill (0.75 Miles)	1.13	Barge Transport	2.50
Truck Hauling to Landfill (1.25 Miles)	1.38	Barge Unloading	1.02
CCR Placement & Compaction at Landfill	0.56	Second Pipe Conveyor	0.04
		Truck Hauling to Mineshaft (0.5 Miles)	0.99
		Sterling Tipping Fee	10.15
<b>Total</b>	<b>1.59 – 1.98</b>	<b>Total</b>	<b>15.42</b>

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<sup>13</sup> Please note that these costs are 100% of the full operating and maintenance costs, not 75% that would reflect the Companies' ownership share of the Trimble County coal-fired units.

1 **Q. Does Sterling’s concept of unloading barges in Warsaw, Kentucky change your**  
2 **conclusion that the Trimble County landfill is the best alternative?**

3 A. No. Although Sterling’s recent Warsaw-barge-unloading concept might reduce the  
4 Sterling alternative’s capital costs (e.g., there would not be a second pipe conveyor), it  
5 would necessarily increase variable operating costs. Moreover, as Mr. Voyles  
6 discusses in his testimony, the Warsaw-barge-unloading concept is fraught with  
7 difficulties that likely make it impracticable.

8 **Consequences of Delaying Trimble County CCR Treatment Facility and Landfill**

9 **Q. What would be the consequences of delaying the Trimble County CCR treatment**  
10 **facility and landfill?**

11 A. The CCR rule will prohibit the Companies from using the existing bottom ash pond to  
12 dispose of CCR by April 2019. Because Trimble County Unit 1 lacks the facilities  
13 needed to prepare its bottom ash for dry transport, it would be unable to operate. An  
14 important part of the CCR treatment facility project is to convert Unit 1’s bottom ash  
15 from wet handling to dry handling as is already the case for Unit 2. Without the landfill,  
16 all of Unit 2’s bottom ash would need to be either beneficially used or trucked to an  
17 offsite landfill.

18 The CCR treatment facility is required to dry the synthetic gypsum produced  
19 by both units’ FGDs. Although there are some third-party owned drying facilities at  
20 the site used for existing beneficial use opportunities, they were constructed before Unit  
21 2 was built and are not sized to meet the entire gypsum volume produced by the plant.  
22 But if Unit 1 were to be shut down, it is possible that they could handle the volume  
23 produced by just Unit 2.

1           Finally, the CCR treatment facility conditions the fly ash produced by both units  
2 for disposal in a landfill. Absent a treatment facility, Unit 1 could not operate and all  
3 fly ash from Unit 2 would need to be beneficially re-used by the cement industry  
4 because they have the necessary dry fly ash handling capability. Currently, the station  
5 has enough dry fly ash storage to operate Unit 2 for approximately two weeks. With  
6 the limited operating flexibility afforded by this relatively small amount of storage, the  
7 Companies would have to find a way to beneficially use the vast majority of the unit's  
8 fly ash in near real-time to ensure that the unit would be continuously available to serve  
9 customers.

10           Essentially, without the timely construction of the CCR treatment facility and  
11 phase 1 of the landfill, it is highly unlikely that the Companies would be able to operate  
12 Unit 1 and the ability to reliably operate Unit 2 becomes questionable.

13 **Q. Have you estimated the cost to customers if the Companies were unable to operate**  
14 **Trimble County Unit 1 and face limitations on operating Trimble County Unit 2?**

15 A. Yes. Based on the Companies' analysis, which I describe below, the estimated cost to  
16 customers of being unable to operate Trimble County Unit 1 and having limited  
17 operation of Trimble County Unit 2 would be \$85 million for the 12 months beginning  
18 May 1, 2019, and significant costs would continue until the Companies could build a  
19 CCR treatment facility and a long-term disposal alternative became available.

20           Losing the Companies' 383 MW share of Unit 1 beginning in May 2019 would  
21 require the Companies to acquire replacement capacity to maintain an adequate reserve  
22 margin. For purposes of this analysis, it was assumed that replacement capacity could  
23 be obtained for approximately the same price per kW as the Companies' existing

1 contract with Bluegrass Generation (including associated firm gas transportation) that  
2 terminates on April 30, 2019. The analysis does not assume that the replacement  
3 capacity would come from that particular plant, but rather from an undetermined  
4 generation resource outside the Companies' transmission system, which would require  
5 the purchase of third-party transmission.

6 The analysis further assumes that Unit 2 can be operated only to the extent that  
7 the unit's fly ash can be beneficially used. Unit 2 currently produces less fly ash  
8 annually than is beneficially used from the entire plant, so its operation will not be  
9 limited if current fly-ash-marketing levels can be maintained. But it is important to  
10 note that fly-ash-marketing levels can change: Variations in plant operating needs  
11 (including how mercury is removed from the units' flue-gas streams) can affect the  
12 marketability of the fly ash produced, and cement-market conditions can affect the  
13 demand for fly ash (fly ash is beneficially used in making cement).

14 The cost of transporting and placing bottom ash and gypsum in an offsite  
15 landfill is assumed to be \$38.21 per ton based on the assumed cost of transporting and  
16 placing CCR in the Valley View Municipal Solid Waste Landfill ("Valley View").<sup>14</sup>  
17 Table 8 summarizes the beneficial use and CCR disposal assumptions used in this  
18 analysis.

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<sup>14</sup> This amount (\$38.21 per ton) includes transportation cost and tipping fees.

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**Table 8 – CCR Assumptions – Delay CCR Treatment Facility and Landfill**

	<u>No Delay</u>	
	<b>Landfill</b>	<b>Beneficial Use</b>
<b>CCR</b>	<b>Tons</b>	<b>Tons</b>
Bottom Ash	45,076	15,000
Fly Ash	90,303	150,000
Gypsum	419,909	100,000
Total	555,288	265,000
	<u>Delay CCR Treatment Facility and Landfill</u>	
	<b>Offsite Landfill</b>	<b>Beneficial Use</b>
<b>CCR</b>	<b>Tons</b>	<b>Tons</b>
Bottom Ash	12,911	15,000
Fly Ash	0	111,646
Gypsum	125,965	100,000
Total	138,877	226,646

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Table 9 below shows that the total incremental cost associated with delaying the CCR treatment facility and landfill by one year is approximately \$85 million.

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**Table 9 – One Year Cost of Delaying CCR Treatment Facility and Landfill (\$Million)**

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<b>Cost Item</b>	<b>Delay</b>	<b>No Delay</b>	<b>Difference (Delay less No Delay)</b>
Replacement Capacity	43.7	0	43.7
CCR Handling Costs	5.5	3.8	1.7
System Production Costs	1,232.5	1,192.6	39.9
Total	1,281.7	1,196.4	85.3

7

8 **Q.**

**If the CCR treatment facility is completed in time but Phase I of the landfill is delayed, would there also be a cost to customers?**

9

10 **A.**

Yes. If only the landfill is delayed beyond April 2019, the Companies' ability to operate the Trimble County coal units would be contingent on their ability to transport the station's CCR to beneficial use markets or to an offsite landfill. The additional transportation costs would be significant, but not as significant as the cost of delaying

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1 both the CCR treatment facility and landfill primarily because it would not require  
 2 obtaining additional generating capacity.

3 For this analysis, the Companies examined the same two beneficial use cases  
 4 that were evaluated in prior landfill analyses: (1) no beneficial use and (2) continuing  
 5 existing levels of around 265,000 tons annually. Table 10 summarizes the beneficial  
 6 use and CCR disposal assumptions used in this analysis.

7 **Table 10 – CCR Assumptions – Delay Landfill Only**

	<b><u>No Delay</u></b>		
	<b>No Beneficial Use</b>	<b>With Beneficial Use</b>	
<b>CCR</b>	<b>Landfill (tons)</b>	<b>Landfill (tons)</b>	<b>Beneficial Use (tons)</b>
Bottom Ash	60,076	45,076	15,000
Fly Ash	240,303	90,303	150,000
Gypsum	519,909	419,909	100,000
Total	820,288	555,288	265,000
	<b><u>Delay Landfill Only</u></b>		
	<b>No Beneficial Use</b>	<b>With Beneficial Us</b>	
<b>CCR</b>	<b>Offsite Landfill (tons)</b>	<b>Offsite Landfill (tons)</b>	<b>Beneficial Use (tons)</b>
Bottom Ash	60,076	45,076	15,000
Fly Ash	240,303	90,303	150,000
Gypsum	519,909	419,909	100,000
Total	820,288	555,288	265,000

8

9 The total incremental cost associated with delaying the landfill by one year  
 10 ranges from approximately \$17 to approximately \$27 million, depending on the  
 11 beneficial use assumption. These results are shown in Table 11.

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**Table 11 – One Year Cost of Delaying Landfill Only (\$Million)**

<b>With Beneficial Use</b>			
<b>Cost Item</b>	<b>Delay</b>	<b>No Delay</b>	<b>Difference (Delay less No Delay)</b>
Replacement Capacity	0	0	0
CCR Handling Costs	21.2	3.8	17.4
System Production Costs	1,192.6	1,192.6	0
Total	1,213.8	1,196.4	17.4
<b>No Beneficial Use</b>			
<b>Cost Item</b>	<b>Delay</b>	<b>No Delay</b>	<b>Difference (Delay less No Delay)</b>
Replacement Capacity	0	0	0
CCR Handling Costs	31.3	4.3	27.0
System Production Costs	1,192.6	1,192.6	0
Total	1,223.9	1,196.9	27.0

3

4 **Q. The Companies studied numerous different alternative landfill designs in their**  
5 **2009 applications concerning the Trimble County landfill and other ECR-related**  
6 **matters. Should the Companies reanalyze all of the various landfill design**  
7 **alternatives before the Commission reaffirms the CPCN and cost-recovery**  
8 **authority the Commission granted for the Trimble County landfill in the 2009**  
9 **ECR cases?**

10 A. No. Mr. Voyles and those under his supervision have kept me and those under my  
11 supervision apprised of the various cost changes associated with the Trimble County  
12 landfill since 2009. It is my understanding that the changes the Companies have made  
13 to the landfill’s design would have similar cost impacts on other design alternatives, so  
14 I do not believe it is necessary to reevaluate all of the numerous design alternatives  
15 studied in 2009.

16 **Q. What is your recommendation concerning Sterling’s request that the Commission**  
17 **revoke the Trimble County landfill Certificate of Public Convenience and**

1           **Necessity (“CPCN”) and associated cost recovery, which the Commission granted**  
2           **in the Companies’ 2009 ECR proceedings?**

3    A.     All the analysis has shown that the PVRR of the TC landfill is less than the Sterling  
4           alternative or retiring and replacing the Trimble County coal units. In addition, the  
5           conservative cost estimates of delaying this project are significant. Therefore, I  
6           respectfully recommend that the Commission reject Sterling’s request and instead  
7           reaffirm in this proceeding the Companies’ existing CPCN and cost-recovery authority.

8    **Q.     Do you have a response to Paragraphs 15-17, 23-24, 26, 35, 41, 46-47, and 54-58 of**  
9           **Sterling’s Complaint in this matter?**

10   A.     To the extent those paragraphs contain material allegations at issue in this matter (as  
11           opposed to narrative and legal conclusions concerning Kentucky law and Commission  
12           procedure) related to the Companies’ activities since the Commission granted a CPCN  
13           for the Trimble County Landfill, those allegations have been addressed in my testimony  
14           above or in the testimony of other of the Companies’ witnesses.

15   **Q.     Does this conclude your testimony?**

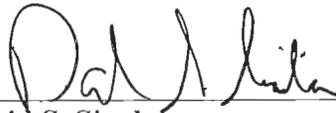
16   A.     Yes, it does.

17

VERIFICATION

COMMONWEALTH OF KENTUCKY )  
 ) SS:  
COUNTY OF JEFFERSON )

The undersigned, **David S. Sinclair**, being duly sworn, deposes and says that he is Vice President, Energy Supply and Analysis for Kentucky Utilities Company and Louisville Gas and Electric Company and an employee of LG&E and KU Services Company, and that he has personal knowledge of the matters set forth in the foregoing testimony, and that the answers contained therein are true and correct to the best of his information, knowledge and belief.

  
\_\_\_\_\_  
David S. Sinclair

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 10th day of August 2015.

  
\_\_\_\_\_  
Notary Public (SEAL)

My Commission Expires:  
**JUDY SCHOOLER**  
**Notary Public, State at Large, KY**  
**My commission expires July 11, 2013**  
**Notary ID # 512743**

## APPENDIX A

### **David S. Sinclair**

Vice President, Energy Supply and Analysis  
LG&E and KU Energy, LLC  
220 West Main Street  
Louisville, Kentucky 40202  
(502) 627-4653

### **Education**

Arizona State University, M.B.A -1991  
Arizona State University, M.S. in Economics – 1984  
University of Missouri, Kansas City, B.A. in Economics - 1982

### **Professional Experience**

LG&E and KU Energy, LLC  
2008-present – Vice President, Energy Supply and Analysis  
2000-2008 – Director, Energy Planning, Analysis and Forecasting

LG&E Energy Marketing, Louisville, Kentucky  
1997-1999 – Director, Product Management  
1997-1997 (4<sup>th</sup> Quarter) – Product Development Manager  
1996-1996 – Risk Manager

LG&E Power Development, Fairfax Virginia  
1994-1995 – Business Developer

Salt River Project, Tempe, Arizona  
1992-1994 – Analyst, Corporate Planning Department

Arizona Public Service, Phoenix, Arizona  
1989-1992 – Analyst, Financial Planning Department  
1986-1989 – Analyst, Forecasts Department

State of Arizona, Phoenix, Arizona  
1983-1986 – Economist, Arizona Department of Economic Security

### **Affiliations**

Consensus Forecasting Group (2013-present) - nonpartisan group of economists that monitor Kentucky's revenues and the economy on behalf of the governor and legislature.

### **Civic Activities**

Serve on the Board of Junior Achievement of Kentuckiana  
Graduate of Leadership Louisville (2008) and Bingham Fellows (2011)

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

**In the Matter of:**

<b>INVESTIGATION OF KENTUCKY</b>	)	
<b>UTILITIES COMPANY'S AND LOUISVILLE</b>	)	<b>CASE NO. 2015-00194</b>
<b>GAS AND ELECTRIC COMPANY'S</b>	)	
<b>RESPECTIVE NEED FOR AND COST OF</b>	)	
<b>MULTIPHASE LANDFILLS AT THE</b>	)	
<b>TRIMBLE COUNTY AND GHENT</b>	)	
<b>GENERATING STATIONS</b>	)	

**TESTIMONY OF**  
**ROBERT M. CONROY**  
**DIRECTOR, RATES**  
**KENTUCKY UTILITIES COMPANY AND**  
**LOUISVILLE GAS AND ELECTRIC COMPANY**

**Filed: August 6, 2015**

1 **Q. Please state your name, position, and business address.**

2 A. My name is Robert M. Conroy. I am the Director of Rates for Kentucky Utilities  
3 Company (“KU”) and Louisville Gas and Electric Company (“LG&E”) and an  
4 employee of LG&E and KU Services Company, which provides services to LG&E and  
5 KU (collectively “Companies”). My business address is 220 West Main Street,  
6 Louisville, Kentucky 40202. A statement of my professional history and education is  
7 attached to this testimony as Appendix A.

8 **Q. Have you previously testified before this Commission?**

9 A. Yes, I have testified before the Commission or provided responses to data requests  
10 numerous times, including all six-month or two-year environmental-surcharge-  
11 mechanism review proceedings initiated by the Commission since 2006. Moreover, I  
12 testified before the Commission regarding the Companies’ 2005, 2006, 2009, and 2011  
13 environmental-compliance plans.<sup>1</sup> And I have fully participated throughout the  
14 Commission’s construction-monitoring process since the 2011 environmental-

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<sup>1</sup> *In the Matter of: The Application of Kentucky Utilities Company for Certificates of Public Convenience and Necessity and Approval of its 2011 Compliance Plan for Recovery by Environmental Surcharge*, Case No. 2011-00161 (June 1, 2011); *In the Matter of: The Application of Louisville Gas and Electric Company for Certificates of Public Convenience and Necessity and Approval of its 2011 Compliance Plan for Recovery by Environmental Surcharge*, Case No. 2011-00162 (June 1, 2011); *In the Matter of: The Application of Kentucky Utilities Company for Certificates of Public Convenience and Necessity and Approval of its 2009 Compliance Plan for Recovery by Environmental Surcharge*, Case No. 2009-00197 (June 26, 2009); *In the Matter of: The Application of Louisville Gas and Electric Company for Certificates of Public Convenience and Necessity and Approval of its 2009 Compliance Plan for Recovery by Environmental Surcharge*, Case No. 2009-00198 (June 26, 2009); *In the Matter of: The Application of Kentucky Utilities Company for a Certificate of Public Convenience and Necessity to Construct a Selective Catalytic Reduction System and Approval of its 2006 Compliance Plan for Recovery by Environmental Surcharge*, Case No. 2006-00206 (June 23, 2006); *In the Matter of: The Application of Louisville Gas and Electric Company for a Certificate of Public Convenience and Necessity to Construct a Selective Catalytic Reduction System and Approval of its 2006 Compliance Plan for Recovery by Environmental Surcharge*, Case No. 2006-00208 (June 23, 2006); *In the Matter of: The Application of Kentucky Utilities Company for a Certificate of Public Convenience and Necessity to Construct Flue Gas Desulfurization Systems and Approval of its 2004 Compliance Plan for Recovery by Environmental Surcharge*, Case No. 2004-00426 (Dec. 20, 2004); *In the Matter of: The Application of Louisville Gas and Electric Company for a Certificate of Public Convenience and Necessity to Construct Flue Gas Desulfurization Systems and Approval of its 2004 Compliance Plan for Recovery by Environmental Surcharge*, Case No. 2004-00421 (Dec. 20, 2004).

1 compliance-plan proceeding. In addition, I testified before the Commission in the  
2 Companies' 2008, 2009, 2012, and 2014 base rate cases.

3 **Q. What are the purposes of your testimony?**

4 A. The purposes of my testimony are to explain: (1) the Commission's approval of projects  
5 required to meet environmental compliance requirements under KRS 278.183 and the  
6 Companies' efforts following such approvals to ensure prudent investment in approved  
7 projects; (2) the risks to customers that would result if Sterling Ventures' ("Sterling")  
8 mine were the sole disposal site for coal combustion residuals ("CCR") produced at the  
9 Companies' Trimble and Ghent Generation Stations; and (3) the Companies' efforts to  
10 pursue beneficial reuse opportunities for CCR when possible. Finally, I will  
11 recommend that the Commission grant the relief the Companies have requested in their  
12 May 22, 2015 Joint Application for a Declaratory Order in this matter, terminate its  
13 investigation, and dismiss Sterling's Complaint.

14 **Q. Please explain the Commission's practice in approving construction projects the  
15 Companies have proposed to comply with environmental regulations applicable  
16 to their coal-fired generating stations.**

17 A. When the Companies need Commission approval to construct facilities to comply with  
18 environmental regulations, they file an application with the Commission for a  
19 Certificate of Public Convenience and Necessity ("CPCN") under KRS 278.020 in  
20 which they seek approval to construct those facilities. In connection with that process,  
21 the Companies also seek cost recovery under their environmental cost recovery  
22 ("ECR") mechanisms pursuant to KRS 278.813. The Commission has issued  
23 numerous CPCNs to the Companies over the years for construction projects to comply

1 with environmental regulations related to coal combustion and has authorized cost  
2 recovery for these and other environmental projects under the Companies' ECR  
3 mechanisms. For example, the Commission issued CPCNs in Case No. 1992-00005,  
4 approving the construction of a flue-gas desulfurization ("FGD") facility at the  
5 Companies' Ghent Generation Station,<sup>2</sup> and in Case No. 2006-00206, approving the  
6 construction of a selective catalytic reduction ("SCR") system at the Companies' Ghent  
7 Generation Station.<sup>3</sup>

8 **Q. Do the Companies continue to analyze and refine their key assumptions even after**  
9 **a CPCN has been granted for a project?**

10 A. Certainly. For example, as mentioned above, the Companies were granted a CPCN to  
11 construct the SCR equipment at the Ghent Generation Station. Subsequently, the  
12 Companies continued to analyze the project, and when changing regulations and  
13 revised cost estimates became available, the Companies determined that construction  
14 of the Ghent Unit 2 SCR was no longer the least cost alternative at that time.<sup>4</sup> The  
15 Companies notified the Commission and allowed the CPCN to lapse.<sup>5</sup> The  
16 Commission, upon the Companies' motion, removed the Ghent Unit 2 SCR project  
17 from KU's environmental compliance plan.<sup>6</sup>

18 **Q. Did the Commission issue a CPCN in 2009 for the construction of a CCR landfill**  
19 **and related facilities at the Trimble County Generation Station?**

---

<sup>2</sup> *In the Matter of: The Application of Kentucky Utilities Company for a Certificate of Convenience and Necessity to Construct a Scrubber on Unit No. 1 of its Ghent Generating Plant* (Case No. 1992-00005) (Ky. PSC July 24, 1992).

<sup>3</sup> *In the Matter of: The Application of Kentucky Utilities Company for a Certificate of Public Convenience and Necessity to Construct a Selective Catalytic Reduction System and Approval of Its 2006 Compliance Plan for Recovery By Environmental Surcharge* (Case No. 2006-00206) (Ky. PSC Dec. 21, 2006).

<sup>4</sup> *Id.* at (Ky. PSC, Feb. 28, 2008).

<sup>5</sup> *Id.*

<sup>6</sup> *Id.*

1 A. Yes. On June 26, 2009, the Companies filed applications with the Commission  
2 requesting CPCNs for various construction projects. Among the CPCNs and projects  
3 proposed was the Trimble County Landfill, including the necessary CCR treatment and  
4 transport system, leachate collection system, the lined landfill itself, and eventual  
5 capping and closing of the landfill.<sup>7</sup> The Companies proposed to construct the landfill  
6 in phases, requested a CPCN for all phases, and the Commission’s CPCN was issued  
7 for all phases.<sup>8</sup> The Companies’ share of the total estimated capital cost for entire  
8 landfill was estimated to be \$404.3 million, of which the Companies estimated they  
9 would expend \$70.5 million to build Phase I.<sup>9</sup>

10 On December 23, 2009, the Commission issued orders that, among other things,  
11 granted the Companies’ requested CPCN for the Trimble County Landfill. The  
12 Commission stated that the landfill project was “required for the long-term operation  
13 of both the existing generating unit, Trimble County Unit No. 1, and Trimble 2 ... in  
14 the manner necessary to comply with the provisions of the Clean Water Act, the  
15 Resource Conservation and Recovery Act, and numerous state air quality  
16 environmental regulations which pertain to landfill operations. ... Taken as a whole,

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<sup>7</sup> See *In the Matter of: Application of Kentucky Utilities Company for Certificates of Public Convenience and Necessity and Approval of its 2009 Compliance Plan for Recovery by Environmental Surcharge*, Case No. 2009-00197, Application (June 26, 2009); Case No. 2009-00197, Direct Testimony of John N. Voyles at 18, 20, and 32-35 (June 26, 2009); Case No. 2009-00197, Direct Testimony of Charles R. Schram at Exhibit CRS-4 Appendix 4 at 45 (June 26, 2009); *In the Matter of Louisville Gas and Electric Company for a Certificate of Public Convenience and Necessity and Approval of its 2009 Compliance Plan for Recovery by Environmental Surcharge*, Case No. 2009-00198, Application (June 26, 2009); Case No. 2009-00198, Direct Testimony of John N. Voyles at 17-18 and 30-32 (June 26, 2009); Case No. 2009-00198, Direct Testimony of Charles R. Schram at Exhibit CRS-2 Appendix 4 at 45 (June 26, 2009).

<sup>8</sup> The Companies acknowledge and are aware of the Commission’s July 24, 2015 Order in Case No. 2015-00089 in which the Commission approved the construction of Phase 1 of Duke Energy of Kentucky’s eight-phase landfill project.

<sup>9</sup> The total Phase I capital cost estimate was \$94.04 million, with 25% of the cost allocated to Indiana Municipal Power Association (“IMPA”) and Illinois Municipal Energy Association (“IMEA”), the other partial owners of the Trimble County coal units. KU’s Project 32 included \$33.86 million and LG&E’s Project 24 included \$36.68 million for the Trimble County Landfill.

1 the evidence indicates that the project is reasonable and cost-effective and will not  
2 result in a wasteful duplication of facilities and, therefore, we find that the requested  
3 CPCN should be granted.”<sup>10</sup>

4 **Q. When the Commission issued the CPCN for the Trimble County Landfill, did the**  
5 **Commission approve any specific dollar amount of expense that would be**  
6 **recoverable through rates?**

7 A. No. When the Commission issues CPCNs for the construction of facilities necessary  
8 to comply with environmental regulations, it does not expressly approve the rate  
9 recovery of the resulting expenses at all, much less at any specific dollar amount.

10 **Q. At the time the Commission issued a CPCN for the construction of the Trimble**  
11 **County Landfill, did it address the mechanism for rate recovery of the**  
12 **construction costs?**

13 A. Yes. In accordance with the Companies’ request, the Commission approved the  
14 regulatory *mechanism* by which the Companies could seek rate recovery for the  
15 construction expenses (for Phase 1 only)<sup>11</sup> – but not any specific dollar amount that  
16 would be recovered. Consistent with Commission practice and KRS 278.183, which  
17 allows for the rate recovery of environmental compliance projects outside of a general  
18 base rate case, the Commission approved the Companies’ request to include costs of  
19 the Trimble County Landfill in its periodic ECR filings, but, importantly, in issuing the  
20 CPCN, the Commission does not approve any specific dollar amount for rate recovery.

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<sup>10</sup> Case No. 2009-00198, Order at 6 (Dec. 23, 2009). *See also* Case No. 2009-00197, Order at 8 (Dec. 23, 2009).

<sup>11</sup> The Companies will need to return to the Commission to seek additional ECR-cost-recovery authority for subsequent phases, ensuring the Commission will have multiple opportunities to review the costs and benefits of each phase of expanding the landfill.

1           Instead, the specific amounts are only approved via subsequent ECR six-month and  
2           two-year reviews (all in accordance with KRS 278.183).

3   **Q.    After the Commission issued a CPCN for the Trimble County Landfill, did the**  
4   **Companies provide the Commission with information about the status of the**  
5   **construction and amount of expense incurred?**

6   A.    Yes.  When the Commission issues a CPCN for a project and approves the inclusion  
7   of the costs for that project in ECR filings, the Companies are, of course, still obligated  
8   to ensure that ongoing investment in that project is prudent.  In addition to the  
9   Commission’s six-month and two-year ECR reviews under KRS 278.183, the  
10   Companies provided regular updates to Commission Staff verifying that continuing  
11   investments were prudent.  Those meetings occurred on November 4, 2010, June 14,  
12   2013, and February 5, 2015.<sup>12</sup>

13   **Q.    If ongoing investment had become imprudent, would the Companies have stopped**  
14   **that investment?**

15   A.    Of course.  The Companies have demonstrated that if and when ongoing investment in  
16   a project becomes imprudent for whatever reason, the investment will cease.  In  
17   addition to the Ghent Unit 2 SCR example discussed above, the Companies cancelled  
18   another project that was addressed in the Commission’s December 23, 2009 Order in  
19   Case No. 2009-00918.  In that Order, the Commission approved the inclusion of  
20   “Project 22” in LG&E’s 2009 ECR Plan.  Project 22 was for the construction of Phase  
21   I of a new landfill at LG&E’s Cane Run Generation Station.  LG&E provided an update  
22   to the status of the project in November 2010 which demonstrated that LG&E

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<sup>12</sup> Copies of the slides the Companies presented at each meeting were attached to the May 22, 2015 Joint Application in this consolidated case as Exhibit 4.

1 continued to evaluate options even after Project 22 had been approved for inclusion in  
2 the ECR Plan.

3 With the LG&E ECR monthly filing for the June 2012 expense month (filed  
4 July 20, 2012), LG&E notified the Commission that it had discontinued work related  
5 to the construction of Project 22 (the Cane Run Landfill – Phase I) since it had received  
6 approval from the Commission for the construction of Cane Run Unit 7 (a combined  
7 cycle gas turbine). Then, in the September 2012 expense month filing (filed October  
8 19, 2012), LG&E notified the Commission that it was cancelling Project 22 altogether.  
9 This is but one example of the Companies’ continued project monitoring (and  
10 cancellation if necessary) to ensure that the ECR investments they make are prudent.

11 **Q. Would the Companies’ customers be subjected to unacceptable risk if Sterling’s**  
12 **mine were used as the sole disposal source of CCR from the Trimble and Ghent**  
13 **Generating Stations?**

14 A. Yes. As explained in David S. Sinclair’s testimony in this case, there are numerous  
15 and unacceptable risk consequences that would result from using Sterling as the sole  
16 source for CCR disposal from Trimble and Ghent. Among other things, even a short  
17 term suspension of CCR disposal at Sterling (which could occur for numerous reasons)  
18 could result in a cessation of generation at Trimble or Ghent and affect the Companies’  
19 ability to provided low cost power to its customers. In addition, the loss of this low  
20 cost generation could result in significantly higher costs for providing the customers’  
21 energy requirements.

22 **Q. Do the Companies pursue beneficial use or reuse of CCR where possible?**

1 A. Yes. As explained in testimony in Case Nos. 2009-00197 and 2009-00198,<sup>13</sup> KU and  
2 LG&E pursued and then proposed beneficial use opportunities as part of the ECR  
3 process in a way to maximize the cost-effectiveness of beneficial reuse for the ultimate  
4 benefit of customers. The Companies' evidence in that case presented specific  
5 beneficial reuse projects (i.e. Holcim, Synthetic Materials, and Trans Ash) and further  
6 described in detail the established business philosophy supporting beneficial reuse  
7 opportunities and the business processes used for the evaluation of beneficial reuse  
8 opportunities.<sup>14</sup> The Commission approved KU's ECR Project 33 and LG&E's ECR  
9 Project 25 ("Beneficial reuse operations and maintenance cost for all generating  
10 stations") in its December 23, 2009 Orders.

11 Additionally, as described in LG&E's Environmental Surcharge Monthly  
12 Report (filed on Jun 14, 2013), LG&E evaluated the cost effectiveness of a new  
13 beneficial reuse opportunity at the Mill Creek Generation Station to recover  
14 approximately 300,000 tons of gypsum annually for the creation of a unique sulfur  
15 product sold to and distributed by agricultural companies resulting in a favorable  
16 revenue requirement outcome.

17 **Q. Do you have a response to Paragraphs 11-14 and 61-75 of Sterling's Complaint in**  
18 **this matter?**

19 A. To the extent those Paragraphs contain material allegations at issue in this matter (as  
20 opposed to narrative and legal conclusions concerning Kentucky law and Commission  
21 procedure) related to the Companies' activities since the Commission granted a CPCN

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<sup>13</sup> See Lonnie E. Bellar's Direct Testimony, pp. 15-18; Charles R. Schram's Direct Testimony, pp. 12-15; and John N. Voyles' Direct Testimony, pp. 37-53.

<sup>14</sup> See the Companies' June 2009 *Comprehensive Strategy for Management of Coal Combustion Byproducts* filed as Exhibit JNV-2 to Mr. Voyles' Direct Testimony in Case No 2009-00197.

1 for the Trimble County Landfill, those allegations have been addressed in my testimony  
2 above or in the testimony of other of the Companies' witnesses.

3 I would also add two comments. First, the Exhibits to Sterling's Complaint  
4 related to the present value revenue requirement ("PVRR") Sterling performed<sup>15</sup> are  
5 based on Excel files used by the Companies in Case Nos. 2009-00197 and 2009-00198  
6 to calculate the estimated annual impact on Total E(m), Jurisdictional E(m), and the  
7 incremental billing factor associated with the inclusion of the projects contained in the  
8 2011 ECR Plan in the ECR mechanism over a five-year period. The incremental billing  
9 factor was used to estimate the bill impact only for purposes of providing the  
10 Companies' customers with public notice of the proposed change in rates.

11 At best, these Excel files produce a hand-calculation of the annual revenue  
12 requirement specific to the operation of the ECR mechanism for a project that could be  
13 used to determine a present value revenue requirement over a period of time. These  
14 Excel files were not used to calculate the PVRRs for the proposed projects in the ECR  
15 and CPCN applications. Reliance on those Excel files is misplaced because those files  
16 do not contain the modeling the Companies use to evaluate various alternatives for a  
17 project, which modeling has been presented to the Commission in the Companies'  
18 CPCN cases and endorsed by Commission Staff in the Companies' Integrated Resource  
19 Plans for at least the last decade.<sup>16</sup> Second, I note that the Sterling's underground mine

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<sup>15</sup> See Exhibits S, U, V, and W attached to Sterling's Complaint.

<sup>16</sup> See, e.g., *In the Matter of: Joint Integrated Resource Plan of Louisville Gas and Electric Company and Kentucky Utilities Company*, Case No. 2011-00140, Staff Report at 44 (March 13, 2013) ("The scope and depth of [the Companies'] reserve margin analysis, as well as the supply-side and demand-side screening analyses, are well developed and informative. The Staff concludes that the overall integration and optimization approach used by LG&E/KU is thorough, well-documented and reasonable in all respects."); See also, *In the Matter of: Joint Integrated Resource Plan of Louisville Gas and Electric Company and Kentucky Utilities Company*, Case No. 2008-00148, Staff Report (Oct. 28, 2009).

1 facility is not a customer of KU and is served by a rural distribution cooperative  
2 corporation. The Companies' electric service to Sterling is limited to its business office  
3 in Lexington, Kentucky.

4 **Q. Do you have a recommendation for the Commission?**

5 A. Yes. I recommend that the Commission grant the declaratory relief the Companies  
6 sought in their Application, namely, the issuance of a declaratory order affirming the  
7 ongoing validity and sufficiency of the Trimble County Landfill CPCN (for the entire  
8 landfill) and environmental cost recovery authority (for Phase I of the landfill) the  
9 Commission granted in Case Nos. 2009-00197 and 2009-00198. I further recommend  
10 that the Commission terminate its investigation of this matter and dismiss Sterling's  
11 Complaint.

12 **Q. Does this conclude your testimony?**

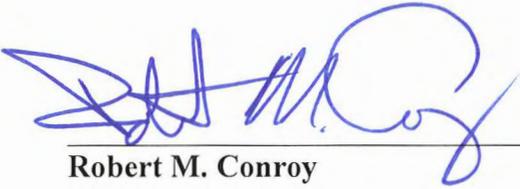
13 A. Yes, it does.

14

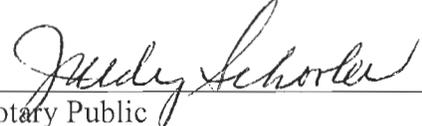
VERIFICATION

COMMONWEALTH OF KENTUCKY )  
 ) SS:  
COUNTY OF JEFFERSON )

The undersigned, **Robert M. Conroy**, being duly sworn, deposes and says that he is Director - Rates for LG&E and KU Services Company, and that he has personal knowledge of the matters set forth in the foregoing testimony, and that the answers contained therein are true and correct to the best of his information, knowledge and belief.

  
\_\_\_\_\_  
**Robert M. Conroy**

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 6<sup>th</sup> day of August 2015.

  
\_\_\_\_\_  
Notary Public (SEAL)

My Commission Expires:  
**JUDY SCHOOLER**  
**Notary Public, State at Large, KY**  
**My commission expires July 11, 2013**  
**Notary ID # 512743**

## APPENDIX A

### **Robert M. Conroy**

Director, Rates  
LG&E and KU Services Company  
220 West Main Street  
Louisville, Kentucky 40202  
Telephone: (502) 627-3324

### **Previous Positions**

Manager, Rates	April 2004 – Feb 2008
Manager, Generation Systems Planning	Feb. 2001 – April 2004
Group Leader, Generation Systems Planning	Feb. 2000 – Feb. 2001
Lead Planning Engineer	Oct. 1999 – Feb. 2000
Consulting System Planning Analyst	April 1996 – Oct. 1999
System Planning Analyst III & IV	Oct. 1992 - April 1996
System Planning Analyst II	Jan. 1991 - Oct. 1992
Electrical Engineer II	Jun. 1990 - Jan. 1991
Electrical Engineer I	Jun. 1987 - Jun. 1990

### **Professional/Trade Memberships**

Registered Professional Engineer in Kentucky, 1995

### **Education**

Essentials of Leadership, London Business School, 2004

Masters of Business Administration

Indiana University (Southeast campus), December 1998

Center for Creative Leadership, Foundations in Leadership program, 1998.

Bachelor of Science in Electrical Engineering;

Rose Hulman Institute of Technology, May 1987