PPL companies

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State Regulation and Rates
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Rick E. Lovekamp
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Mr. Jeff DeRouen
Executive Director
Kentucky Public Service Commission
211 Sower Boulevard
Frankfort, Kentucky 40601

RECEIVED
SEP 15 2011
PUBLIC SERVICE COMMISSION

September 15, 2011

RE: ***Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for a Certificate of Public Convenience and Necessity and 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 LaGrange, Kentucky***
Case No. 2011-00___

Dear Mr. DeRouen:

Please find enclosed and accept for filing an original and ten (10) copies of Louisville Gas and Electric Company and Kentucky Utilities Company's Joint Application and Testimonies of Paul W. Thompson, David S. Sinclair, John N. Voyles, Jr., Lonnie E. Bellar, and Gary H. Revlett, in the above-referenced docket.

Also enclosed is an orignial and ten (10) copies of a Petition for Confidential Protection of Exhibits to Testimony and for Deviation from 807 KAR 5:001 Section 7(2)).

Finally, also enclosed is an original and ten (10) copies of a Motion for Informal Conference in connection with this docket.

Should you have any questions regarding the enclosed, please do not hesitate to contact me. If you receive any requests for copies of the attached documents, please refer the same to me directly; I will provide such copies upon request.

Sincerely,

Rick E. Lovekamp

Rick E. Lovekamp

cc: Hon. Dennis G. Howard
Hon. Michael L. Kurtz

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

RECEIVED
SEP 15 2011
PUBLIC SERVICE COMMISSION

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 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 LAGRANGE, KENTUCKY	)	**CASE NO. 2011-______**

JOINT APPLICATION

Louisville Gas and Electric Company ("LG&E") and Kentucky Utilities Company ("KU") (collectively the "Companies" or "Applicants") pursuant to KRS 278.020, et seq., 807 KAR 5:001, Sections 8 and 9, and KRS 278.216 hereby jointly apply to the Public Service Commission ("Commission") for a Certificate of Public Convenience and Necessity ("CPCN"), and a Site Compatibility Certificate, for the construction of a 640 MW net summer rating natural gas combined cycle combustion turbine ("NGCC") at the Companies' Cane Run Generating Station, including a 20-inch natural gas pipeline, and for the purchase of Bluegrass Generation Company, LLC's facilities in LaGrange, Kentucky, which include natural gas simple cycle combustion turbines ("SCCT"). In support of this Joint Application, the Companies state as follows:

1. Address. LG&E's full name and business address is Louisville Gas and Electric Company, 220 West Main Street, Louisville, Kentucky 40202. KU's full name

and business address is Kentucky Utilities Company, One Quality Street, Lexington, Kentucky 40507. The mailing address for both applicants is P.O. Box 32010, Louisville, Kentucky 40232.

2. Articles of Incorporation. Certified copies of LG&E's and KU's Articles of Incorporation are already on file with the Commission in Case No. 2010-00204, *In the Matter of: Joint Application of PPL Corporation, E.ON AG, E.ON U.S. Investments Corp., E.ON U.S. LLC, Louisville and Gas Electric Company and Kentucky Utilities company for Approval of an Acquisition of Ownership and Control of Utilities*, filed on May 28, 2010, and are incorporated by reference herein pursuant to 807 KAR 5:001, Section 8(3).

3. In March 2011, the Environmental Protection Agency ("EPA") issued a proposed rule aimed at reducing hazardous air pollutants from new and existing coal-and oil-fired electric utility steam generating units ("HAPs Rule"). In August 2011, the EPA issued its final Cross-State Air Pollution rule ("CSAPR") that provides limited allowances for NO_x and SO_2 emissions starting in 2012. In addition, the EPA's National Ambient Air Quality Standards ("NAAQS") will further restrict NO_x and SO_2 emissions beginning in 2016 and 2017.

4. Statement of Need (807 KAR 5:001 § 9(2)(a)). In order to comply with the foregoing regulations at all but one of their coal-fired steam generating units, the Companies must either install additional emission controls or retire and replace the capacity. The Companies evaluated these decisions at each of their coal-fired steam generating units and submitted their least-cost compliance plan ("2011 Compliance Plan") to the Commission in June 2011 in their Applications for Certificates of Public

Convenience and Necessity and Approval of Their 2011 Compliance Plan for Recovery of Environmental Surcharge.[1] Given the operating characteristics, age, and size of the units, the Companies determined that the cost of additional emission controls at their Green River and Tyrone plants cannot be justified. The Companies determined that the coal-fired steam generating units at Green River and Tyrone should be retired at the end of 2015. In addition, the Companies determined that the cost of additional emission controls at their Cane Run plant cannot be justified and that the coal-fired steam generating units designated as Cane Run 4, Cane Run 5 and Cane Run 6 should be retired at the end of 2015. With the retirements of the Cane Run, Green River and Tyrone coal-fired steam generating units, the Companies will have a capacity shortfall in 2016 of 877 MWs.

In April 2011, the Companies filed their 2011 Integrated Resource Plan ("2011 IRP") with the Commission.[2] The 2011 IRP provides a detailed summary of the Companies' plan to meet their future energy requirements within their service territories at the lowest possible cost consistent with reliable supply. Like the 2011 Compliance Plan, the 2011 IRP found that the Green River, Tyrone and Cane Run coal-fired steam generating units would be retired at the end of 2015. The Companies' capacity needs through 2016, as identified in the 2011 IRP, are summarized in the table below.

[1] Case Nos. 2011-00161 and 2011-00162.
[2] Case No. 2011-00140.

LG&E/KU Resource Summary

	2012	2013	2014	2015	2016	2017	2018
Forecasted Peak Load	7,210	7,356	7,477	7,603	7,654	7,760	7,897
Peak Reductions[3]	390	442	501	544	585	626	664
Total Demand	6,821	6,915	6,976	7,059	7,070	7,135	7,234
Existing Resources	8,002	8,006	8,001	7,996	7,969	7,970	7,970
Retirements					(797)	(797)	(797)
Firm Purchases (OVEC)	154	152	152	152	152	152	152
Total Supply	8,156	8,158	8,153	8,148	7,324	7,325	7,325
16% Reserve Requirements	1,091	1,106	1,116	1,129	1,131	1,142	1,157
Difference from Target	243	137	61	(40)	(877)	(952)	(1,066)
Reserve Margin	19.6%	18.0%	16.9%	15.4%	3.6%	2.7%	1.3%

The Companies submitted a request for proposals ("RFP") in December 2010 for electric energy and capacity. Responses to the RFP included power purchase agreements and asset sale offers for gas, coal, nuclear, wind, biomass and solar technologies. The Companies' analysis of the RFP responses was completed in two phases. Phase I consisted of an initial screening of the responses through the use of a scoring system ("Phase I Screening") which evaluated attributes including cost, term and site viability. The goal of the Phase I screening process was to select the top candidates for each technology for further evaluation. Phase II of the analysis evaluated the top candidates (and various combinations of the top candidates) from the Phase I Screening in more detail. Phase II was completed in several iterations and ultimately considered the Companies' self-build alternatives.

At the conclusion of these processes, the Companies determined that the least-cost alternative for complying with the aforementioned EPA regulations and meeting the capacity and energy needs beginning in 2016 is to build a 640 MW net summer rating NGCC at the Companies' Cane Run facility ("CR7") and to purchase Bluegrass

[3] Peak reductions include the impacts of interruptible demands and demand-side management programs.

Generation Company, LLC's existing SCCT facilities in LaGrange, Kentucky. A detailed description of the foregoing process is set forth in the 2011 Resource Assessment attached as an exhibit to the testimony of David S. Sinclair.

5. Permits from Public Authorities (807 KAR 5:001, § 9(2)(b)). The Companies will be required to obtain certain environmental and construction-related permits associated with the construction of CR7. The required permits and the process for obtaining those permits is discussed in the direct testimonies of John N. Voyles and Gary H. Revlett, which accompany this Joint Application and are incorporated herein by reference. Copies of those permits will be filed with the Commission, as obtained, to the extent required by law or requested by the Commission. No permits from public authorities will be required for the purchase of Bluegrass Generation Company's SCCT facilities.

6. Location of Proposed Construction (807 KAR 5:001, § 9(2)(c)). As previously stated, CR7 will be located at the Companies' Cane Run Generating Station in Jefferson County, Kentucky. There are no like facilities in the vicinity of CR7, except for the existing units at Cane Run, and it is not anticipated that CR7 will compete with any other public utilities, corporations or persons.

7. Manner of Proposed Construction (807 KAR 5:001, § 9(2)(c)). As explained in detail in the direct testimony of Mr. Voyles, CR7 will be constructed primarily through a self-build process. An engineering firm has been selected to perform engineering services, optimize design for the Companies' needs, support environmental permitting and to assist the Companies in their procurement efforts. Construction is scheduled to begin upon receipt of the CPCN and other required regulatory and

environmental approvals. Completion of CR7 is expected to occur no later than January 1, 2016. In addition, a 20-inch natural gas pipeline approximately 8 miles in length will be constructed to supply natural gas to CR7.

8. Area Maps (807 KAR 5:001, § 9(2)(d)). The required area map showing the location where the Companies propose to build CR7 is attached as Joint Application Exhibit 1. A map showing the accompanying gas pipeline is attached as Joint Application Exhibit 2. A map showing the Bluegrass Development facilities in LaGrange, Kentucky, is attached as Joint Application Exhibit 3.

9. Financing Plans (807 KAR 5:001, § 9(2)(e)). The total projected capital cost for CR7, including the gas pipeline, is $583 million. The proposed purchase price for the Bluegrass Generation facility is $110 million. The Companies' proposed financing of such costs is discussed in the direct testimony of Lonnie E. Bellar, which accompanies this Joint Application and is incorporated herein by reference.

10. Estimated Cost of Operation (807 KAR 5:001, § 9(2)(f)). The estimated annual cost of operation of the proposed construction and the proposed purchased facilities is set forth in the direct testimony of Mr. Voyles.

11. Ownership. Subject to the necessary approvals, KU will own 78% and LG&E will own 22% of CR7; KU will own 31% and LG&E will own 69% of Bluegrass Generation, all pursuant to the Power Supply System Agreement ("PSSA") dated October 9, 1997. The ownership of CR7 and Bluegrass Generation is described in more detail in the direct testimony of Messrs. Thompson, Sinclair and Bellar.

12. Site Compatibility Certificate. Consistent with KRS 278.216, a Site Assessment Report is attached as an exhibit to the direct testimony of Mr. Revlett. As set

forth in that Report and the testimony of Mr. Revlett, the proposed construction of CR7 is fully compatible with the selected site and the surrounding area because it will be located at the Cane Run Generating Station, which was constructed to support additional combustion turbines such as CR7.

13. Testimony and Exhibits. A detailed statement of the facts establishing that the construction of CR7 and the purchase of the Bluegrass Generation facilities are required by the public convenience and necessity, and otherwise supporting this Joint Application, is included in the direct testimony and exhibits of the Companies' witnesses:

- Paul W. Thompson, Senior Vice President, Energy Services;
- David S. Sinclair, Vice President, Energy Marketing;
- John N. Voyles, Vice President Transmission and Generation Services;
- Lonnie E. Bellar, Vice President, State Regulation and Rates; and
- Gary H. Revlett, Director, Environmental Affairs.

14. The HAPs Rule's tight compliance deadline, the need to arrange construction reasonably, the high industry-wide demand to build similar facilities resulting from the HAPs Rule and contractual obligations all necessitate the Companies' taking quick but carefully analyzed action. The Companies therefore respectfully ask the Commission to issue the requested CPCN on or before April 30, 2012, to permit the Companies to obtain the best pricing possible under the current market conditions and to attempt to obtain construction contracts that will ensure the maximum timely compliance that is prudently and reasonably feasible.

WHEREFORE, LG&E and KU respectfully request the Commission to issue an order granting the Companies a Certificate of Public Convenience and Necessity, and a

Site Compatibility Certificate, for the construction of a 640 MW net summer rating natural gas combined cycle combustion turbine at the Companies' Cane Run Generating Station, including a 20-inch natural gas pipeline, and for the purchase of the existing Bluegrass Generation Company, LLC facilities, including the natural gas simple-cycle combustion turbines, located in LaGrange, Kentucky, and for any and all other relief to which the Companies may appear entitled.

Dated: September 15, 2011

Respectfully submitted,

Allyson K. Sturgeon

Kendrick R. Riggs
Robert M. Watt, III
Lindsey W. Ingram, III
Stoll Keenon Ogden, PLLC
300 West Vine Street, Suite 2100
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(502) 627-2088
allyson.sturgeon@lge-ku.com

Counsel for Louisville Gas and Electric Company and Kentucky Utilities Company

CERTIFICATE OF SERVICE

This is to certify that the foregoing pleading has been served by mailing a copy of same, postage prepaid, to the following persons on the 15th day of September 2011:

Dennis G. Howard, II, Esq.
Assistant Attorney General
Office of the Attorney General
Office of Rate Intervention
1024 Capital Center Drive, Suite 200
Frankfort, Kentucky 40601

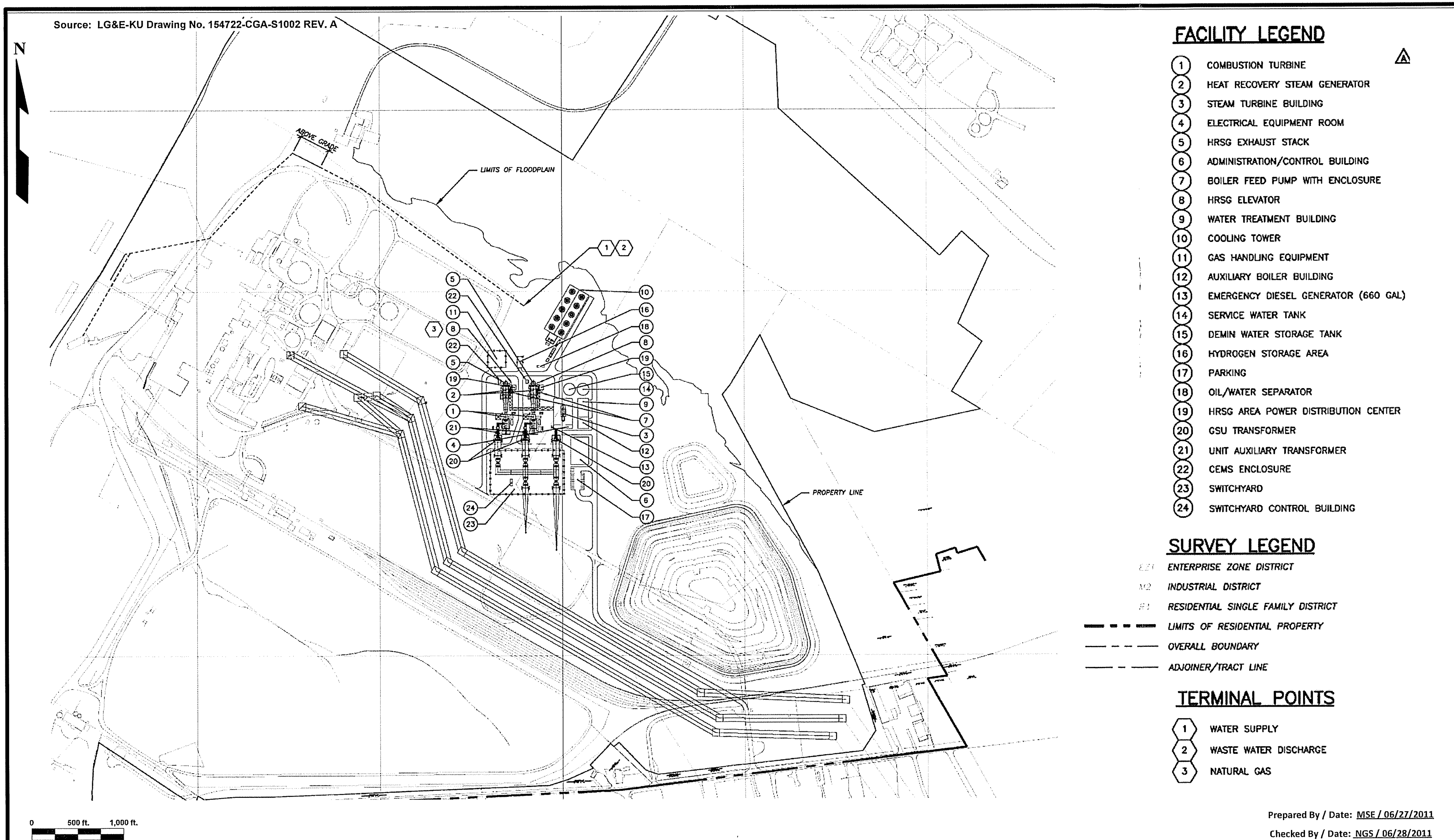
Michael L. Kurtz
Boehm, Kurtz & Lowry
36 East Seventh Street, Suite 1510
Cincinnati, OH 45202

Allyson K. Sturgeon

Counsel for Louisville Gas and
Electric Company and Kentucky
Utilities Company

Exhibit 1

Source: LG&E-KU Drawing No. 154722-CGA-S1002 REV. A



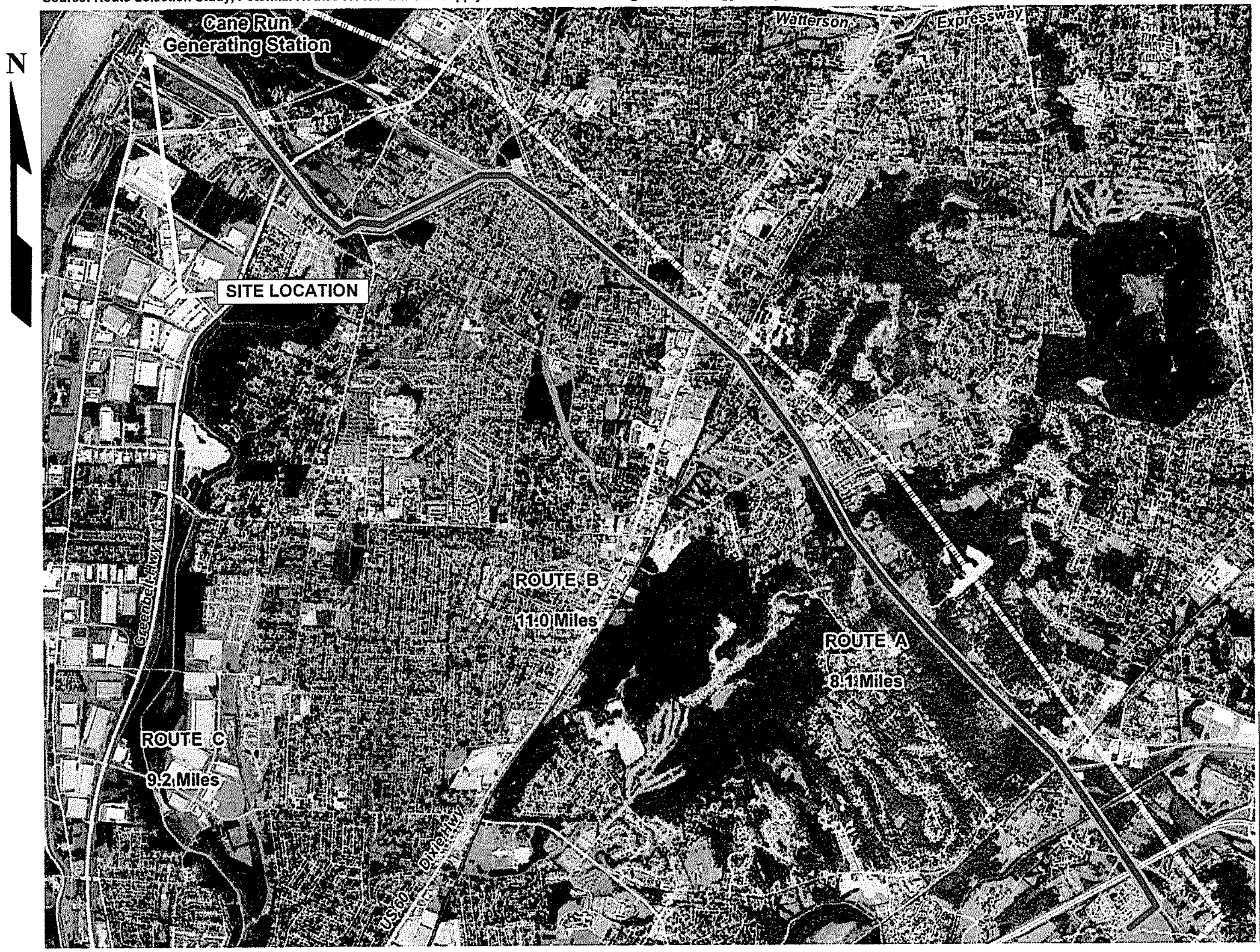
Prepared By / Date: MSE / 06/27/2011

Checked By / Date: NGS / 06/28/2011

LOUISVILLE GAS & ELECTRIC COMPANY 5252 CANE RUN ROAD LOUISVILLE, KENTUCKY	amec	SITE MAP Project No. 3142-11-1377 FIGURE 3

Exhibit 1

Source: Route Selection Study, Potential Routes for Natural Gas Supply for Cane Run Generating Station, Energy Management & Services Co.: Exhibit 3.1 - Route Selection Study



LEGEND

PROPOSED HIGH PRESSURE NATURAL GAS PIPELINE ROUTE

EXISTING OVERHEAD ELECTRIC TRANSMISSION LINES

0 2,250 ft. 4,500 ft.

Prepared By / Date: MSE / 06/27/2011

Checked By / Date: NGS / 06/28/2011

LOUSVILLE GAS & ELECTRIC COMPANY 5252 CANE RUN ROAD LOUISVILLE, KENTUCKY	amec	PROPOSED PIPELINE ROUTE MAP Project No. 3142-11-1377 FIGURE 10

Exhibit 2

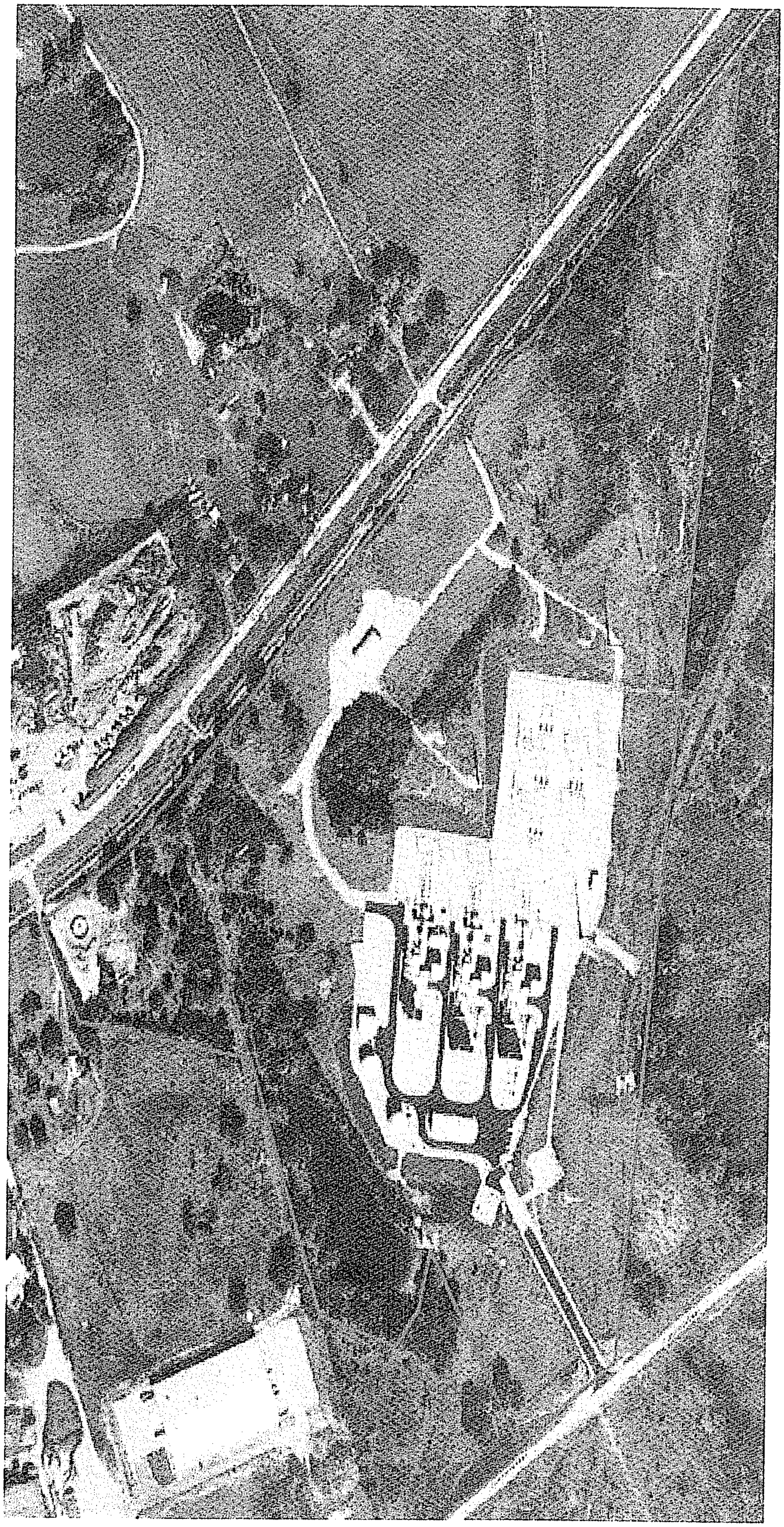


Exhibit 3

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

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 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 LAGRANGE, KENTUCKY	)	CASE NO. 2011-______

DIRECT TESTIMONY OF
PAUL W. THOMPSON
SENIOR VICE PRESIDENT, ENERGY SERVICES
KENTUCKY UTILITIES COMPANY
AND LOUISVILLE GAS AND ELECTRIC COMPANY

Filed: September 15, 2011

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

A. My name is Paul W. Thompson. I am the Senior Vice President, Energy Services for Kentucky Utilities Company ("KU") and Louisville Gas and Electric Company ("LG&E"). I am employed by LG&E and KU Services Company, which provides services to LG&E and KU (collectively "the Companies"). My business address is 220 West Main Street, Louisville, Kentucky, 40202. A complete statement of my education and work experience is attached to this testimony as Appendix A.

Q. Have you previously testified before this Commission?

A. Yes. I testified in LG&E's and KU's most recent general rate cases, Case Nos. 2009-00548 and 2009-00549, *In re the Matter of: Application of Louisville Gas and Electric Company for an Adjustment of Its Electric and Gas Base Rates* and *In re the Matter of: Application of Kentucky Utilities Company for an Adjustment of Base Rates*. I also testified in LG&E's 2008 rate application, Case No. 2008-00252, *In re the Matter of: Application of Louisville Gas and Electric Company for an Adjustment of Its Electric and Gas Base Rates*, and KU's 2008 rate application, Case No. 2008-00251, *In re the Matter of: Application of Kentucky Utilities Company for an Adjustment of Base Rates*. Additionally, I testified in *In re the Matter of: The Application of Big Rivers Electric Corporation, E.ON U.S. LLC, Western Kentucky Energy Corp., and LG&E Energy Marketing Inc. for Approval of Transaction* in Case No. 2007-00455. I also filed testimony in the Commission's investigation of LG&E's and KU's membership in the Midwest Independent Transmission System Operator, Inc., *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, Inc.,* Case No. 2003-0266. I testified in LG&E's

2003 rate application, Case No. 2003-0433, *In re the Matter of: An Adjustment of the Gas and Electric Rates, Terms and Conditions of Louisville Gas and Electric Company*, and KU's 2003 rate application, Case No. 2003-0434, *In re the Matter of: An Adjustment of the Electric Rates, Terms and Conditions of Kentucky Utilities Company*. Finally, I testified in the merger proceedings of LG&E and KU before the Kentucky Public Service Commission in Case No. 1997-0300, *In the Matter of: Application of Louisville Gas and Electric Company and Kentucky Utilities Company for Approval of a Merger under KRS 278.020.*

Q. What is the purpose of your testimony?

A. I will provide an overview of the Companies' plan to comply with final and soon-to-be-final air quality regulations in the most cost-effective manner possible by retiring existing generating facilities at Green River, Tyrone and Cane Run. The Companies plan to replace those retired facilities and meet expected load forecast by constructing new natural gas combined cycle facilities at Cane Run ("Cane Run NGCC") and purchasing natural gas simple cycle facilities from Bluegrass Generation Company, LLC in LaGrange, Kentucky. Finally, I will describe: the Companies' plan for joint ownership of Cane Run NGCC and the Bluegrass Generation assets; the Companies' plans for the retired equipment at Green River, Tyrone and Cane Run; and the effects the retirement plans will have on employment.

Q. Please identify the other witnesses offering direct testimony on behalf of the Companies in this case, and generally describe the subject matter of each such testimony.

A. The Companies are offering direct testimony from the following witnesses:

- David S. Sinclair - Mr. Sinclair will describe the process by which the Companies determined the least-cost method of complying with changing environmental regulations, including a presentation of the Companies' Resource Assessment.
- John N. Voyles - Mr. Voyles will describe the proposed construction of Cane Run NGCC and the assets proposed to be purchased from Bluegrass Generation Company in LaGrange, Kentucky.
- Gary H. Revlett – Mr. Revlett will discuss the changing environmental regulations and permitting issues relating to Cane Run NGCC, and will sponsor the Companies' Site Assessment Report.
- Lonnie E. Bellar - Mr. Bellar will discuss financing, joint participation, cost recovery and other regulatory approvals to be obtained.

Q. Please describe the events that led to the Companies' decision to construct new generation facilities at Cane Run and to purchase Bluegrass Generation assets in LaGrange, Kentucky.

A. As described by Mr. Revlett, changing and more stringent environmental regulations are coming. Compliance with those regulations means that the Companies will either have to install pollution control devices on most of their generation assets, or retire those assets and replace them with different generation technology. Therefore, as described by Mr. Sinclair, the Companies performed an economic analysis that concluded that the most cost-effective method of environmental compliance for much of the Companies' generation fleet is to install pollution control devices. However, the Companies have also concluded that for the generation assets at Tyrone, Green

River and Cane Run, it is more cost-effective to retire them and replace that retired capacity with Cane Run NGCC and the Bluegrass Generation assets.

Q. Please describe the facilities to be constructed at Cane Run and purchased from Bluegrass Generation.

A. The Companies are proposing the construction of a 640 MW net summer rating natural gas combined cycle unit at their existing site at Cane Run in Jefferson County, Kentucky. The estimated cost of constructing the new facilities at Cane Run is $583 million. The Companies are further proposing the purchase of the natural gas simple cycle generation facilities owned by Bluegrass Generation located in LaGrange. Those facilities include three turbines with a combined capacity of 495 MW net summer rating. The cost of that purchase is $110 million.

Q. When did the Companies last construct a base load generating unit?

A. The Companies last constructed base load generating unit was Trimble County 2 which was placed in commercial operation in January 2011. As for Cane Run, the existing facilities are base load units, but they will be retired and replaced with a single and larger intermediate load unit. The Bluegrass Generation facilities will be peaking units.

Q. Why are the Companies seeking approval to construct and purchase a total of 1135 MW when the retirements at Cane Run, Tyrone and Green River total only 790 MW?

A. As regulated utilities, the Companies have an obligation to serve all customers located in their service territories, and thus must be prepared to meet load growth in those areas. As explained in the testimony of Mr. Sinclair, the Companies load forecast indicates a capacity shortfall of 877 MW in 2016. As he also explains, economic prudence and generation reliability during the construction at Cane Run require the Companies to purchase all of the Bluegrass Generation assets within the coming months, which is when the Companies are certain they will be available. The construction and purchase plans are essential for the Companies to provide reliable, low-cost power to their growing native loads.

Q. Did the Companies consider other options to meet the need for additional capacity?

A. Yes. As explained in the testimony of Mr. Sinclair, the Companies issued a Request for Proposal ("RFP") and prepared a Resource Assessment to compare available options for meeting the projected needs of their respective customers. As explained in the Resource Assessment, one of the options considered in the RFP process was a "self-build" proposal under which the Companies will be responsible for constructing the new facilities at Cane Run. That proposal was prepared and submitted by an independent team of personnel from within the Companies that was comprised of people from all necessary areas of expertise. In the final analysis, the Resource Assessment determined that a combination of the self-build construction proposal at Cane Run and the Bluegrass Generation purchase is the least-cost option to allow the Companies to meet their needs for additional capacity.

Q. Who will own Cane Run NGCC and the assets proposed to be purchased from Bluegrass Generation?

A. They will be jointly owned by KU and LG&E. For Cane Run NGCC, KU will own 78% and LG&E will own 22%. For the Bluegrass Generation assets, KU will own 31% and LG&E will own 69%. As explained in the Resource Assessment that is attached to David Sinclair's testimony, those particular allocations are optimal when considering the production cost savings of Cane Run NGCC, each company's individual energy and capacity needs, and the need to balance each company's reserve margin.

Q. What are the Companies' plans for the existing structures at Cane Run, Green River and Tyrone after those facilities are retired?

A. The Companies do not plan on removing existing structures. Instead, they will be used as necessary for warehousing and/or other purposes that may arise. The Companies will cap the stacks at Cane Run, Green River and Tyrone and perform necessary maintenance for safety and security of existing structures.

Q. Please describe the overall effects on employment that will result from the retirement of Cane Run, Green River and Tyrone and the addition of newly constructed facilities at Cane Run and existing facilities at LaGrange.

A. The effect of retiring Tyrone is minimal at most because Tyrone has been in limited operating status for several years. As a result of that, Tyrone is managed by the existing employees at the nearby E.W. Brown facilities which will remain in full operation. Cane Run is a somewhat different case because it will need to remain operational until the new facilities are constructed. At the appropriate time, the Companies will work with IBEW 2100 to reach the best solution, but we anticipate a similar approach to that used at Tyrone by which as many employees as possible will be transferred to nearby facilities. Cane Run as it exists today has a work force of 125 employees. The Companies expect that Cane Run NGCC will require a work force of approximately 35-40 employees. As for Green River, the Companies have committed to meeting with the local steelworkers union representing the Green River employees in the beginning of 2012. While Green River is more difficult due to the more remote location and uncertainty regarding future new generation needs located in that area, the Companies intend to take actions consistent with what has been done in similar historical instances to accommodate maintaining as many existing employees as practical. Finally, as for the Bluegrass Generation assets, the Companies anticipate operating it using another plant's work force in a manner similar to how Tyrone has been managed by the E.W. Brown work force.

Q. Do you have a recommendation for the Commission?

A. Yes. It is my recommendation that the Commission grant the Companies' Application and approve the planned construction at Cane Run and the purchase of the Bluegrass Generation facilities in LaGrange, Kentucky. That approval will allow the Companies to meet the demand of their customer bases in a least-cost manner while achieving compliance with environmental regulations.

Q. Does this conclude your testimony?

A. Yes, it does.

VERIFICATION

COMMONWEALTH OF KENTUCKY)
) SS:
COUNTY OF JEFFERSON)

The undersigned, **Paul W. Thompson**, being duly sworn, deposes and says that he is Senior Vice President, Energy 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.

Paul W. Thompson

Paul W. Thompson

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 14th day of September 2011.

Tammy J. Elzy (SEAL)
Notary Public

My Commission Expires:

November 9, 2014

APPENDIX A

Paul W. Thompson

Senior Vice President, Energy Services
LG&E and KU Energy LLC
220 West Main Street
Louisville, KY 40202

Industry Affiliations

FutureGen Industrial Alliance, Board Member and former Chairman of the Board
Center for Applied Energy Research, Advisory Board Member
Electric Energy Inc., Board Member
Ohio Valley Electric Corporation, Board Member

Civic Activities

Jefferson County Public Education Foundation Board
University of Kentucky College of Engineering, Project Lead The Way, Council Member
Greater Louisville Inc. Board
Louisville Downtown Development Corporation Board, Finance Committee Chair
Louisville Free Public Library Foundation Board, Chairman
  Chair, Annual Appeal 2002 & 2203
  Co-Chair Annual Children's Reading Appeal 1999, 2000, & 2001
March of Dimes 1997 & 1998 - Honorary Chair
Habitat for Humanity - Representing LG&E as co-sponsor
Friends of the Waterfront Board 1998 – 2002
Leadership Louisville -- 1997-98

Education

University of Chicago, MBA in Finance and Accounting -- 1981
Massachusetts Institute of Technology (MIT), BS in Mechanical Engineering -- 1979

Previous Positions

LG&E Energy Marketing, Louisville, KY
  1998 - 1999 – Group Vice President
Louisville Gas and Electric Company, Louisville, KY
  1996 - 1999 – Vice President, Retail Electric Business
LG&E Energy Corp., Louisville, KY
  1994 - 1996 (Sept.) – Vice President, Business Development
  1994 - 1994 (July) – Louisville Gas & Electric Company, Louisville, KY
    General Manager, Gas Operations
  1991 - 1993 – Director, Business Development
Koch Industries Inc.
  1990 - 1991 – Koch Membrane Systems, Boston, MA

National Sales Manager, Americas

1989 - 1990 – John Zink Company, Tulsa, OK

Vice President, International

Lone Star Technologies (a former Northwest Industries subsidiary)

1988 - 1989 – John Zink Company, Tulsa, OK

Vice Chairman

1986 - 1988 – Hydro-Sonic Systems, Dallas, TX

General Manager

1986 – 1986 (July) –- Ft. Collins Pipe, Dallas, TX, General Manager

1985 - 1986 – Lone Star Technologies, Dallas, TX, Assistant to Chairman

1980 - 1985 – Northwest Industries, Chicago, IL, Manager, Financial Planning

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

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 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 LAGRANGE, KENTUCKY	)	CASE NO. 2011-_______

DIRECT TESTIMONY OF
DAVID S. SINCLAIR
VICE PRESIDENT, ENERGY MARKETING
LG&E AND KU SERVICES COMPANY

Filed: September 15, 2011

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

A. My name is David S. Sinclair. I am Vice President, Energy Marketing for Louisville Gas and Electric Company ("LG&E") and Kentucky Utilities Company ("KU") (collectively, "Companies") and an employee of LG&E and KU Services Company, which provides services to LG&E and KU. My business address is 220 West Main Street, Louisville, Kentucky, 40202. A complete statement of my education and work experience is attached to this testimony as Appendix A.

Q. Please describe your job responsibilities.

A. I have four primary areas of responsibility: (i) fuel procurement (coal and natural gas) for the power stations and coal combustion by-product marketing, (ii) real time dispatch optimization of the generating stations to meet load (including buying and selling of electricity), (iii) sales and market analysis and generation planning and (iv) business information support of the generation business. As pertains to this proceeding, the Sales Analysis and Forecasting group prepared the load forecast and the Generation Planning group performed the analysis of the impact of Environmental Protection Agency ("EPA") regulations on the Companies' future generation portfolio. Both of these were done under my direction.

Q. Have you previously testified before this Commission?

A. Yes. I previously testified before this Commission in Case No. 2004-00507 in which the Companies sought and received approval for the expansion of the Trimble County Generating Station and in Case No. 2003-00266, the investigation into the Companies' membership in the Midwest Independent System Operator.

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

A. Yes. I am sponsoring Exhibit DSS-1 to my Direct Testimony, the 2011 Resource Assessment.

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

A. The purpose of my testimony is to describe the process by which the Companies reached the decision to construct a new natural gas combined cycle generating facility at Cane Run and to purchase existing natural gas simple cycle facilities in Oldham County. That decision was reached after an extensive process that considered: (1) the Companies' Joint Load Forecast; (2) the impact of the Companies' demand-side management ("DSM") programs; (3) the proposed, soon-to-be final, and final EPA emissions regulations; (4) the impact of the EPA regulations on the existing generation fleet, particularly facilities at Cane Run, Green River and Tyrone; (5) the issuance and consideration of a Request for Proposal ("RFP") for replacing the retired facilities and meeting future load growth; and (6) the methodology used to determine ownership shares for LG&E and KU for the proposed capacity additions. Finally, I will recommend to the Commission that the proposed construction of a natural gas combined cycle combustion turbine at Cane Run and the acquisition of natural gas simple cycle combustion turbines in Oldham County be approved.

Section 1 – Forecast of Peak Demand and Energy

Q. Please describe the Companies' Joint Load forecast that was used to prepare the 2011 Integrated Resource Plan[1] ("IRP").

A. All forecasts of energy sales/requirements, peak demand, and use-per-customer assume normal weather – taken as the 20-year average of daily temperatures in each month. The following table presents the forecast for the Companies' sales and peak demand (before DSM programs and interruptible load impacts) through 2017. From 2011 to 2017, the Companies' sales before the impact of DSM are expected to grow at a compound annual growth rate of 1.5 percent.

The Companies' demand forecast reflects the coincident peak of both utilities (KU & LG&E); the individual company peaks are not necessarily coincident. The Companies' native load demand before the impact of DSM programs and interruptible load is forecast to grow from 7,091 MW in 2011 to 7,760 MW in 2017, a growth of 669 MW with a compound annual growth rate of 1.5 percent.

Year	**Combined Company Sales (GWh)**	**Combined Company Peak Demand (MW)**
2011	33,912	7,091
2012	34,511	7,210
2013	35,076	7,356
2014	35,530	7,477
2015	36,097	7,603
2016	36,615	7,654
2017	37,074	7,760

[1] Case No. 2011-00140.

Q. How does the Joint Load Forecast compare to growth experienced by the Companies historically?

A. On a combined company basis, the number of native electric customers increased from 925,251 in 2006 to 940,331 in 2010, a compound annual growth rate of 0.4 percent. Actual sales (after the impact of DSM and interruptible load programs) for KU and LG&E rose from 33,550 gigawatt-hours ("GWh") in 2006 to 35,238 GWh in 2010, increasing at a compound annual growth rate of 1.2 percent. On a weather-normalized basis, average sales growth was flat during this period, which included the recession beginning in 2008. Combined energy requirements grew from 35,070 GWh in 2006 to 35,382 GWh in 2010. Peak demand fluctuated over the 2006-2010 period. On an actual basis, peak demand increased from 6,863 MW in 2006 to 7,175 MW in 2010. The reduced demands in 2008 and 2009 were primarily the result of mild summer weather; the peak demands for these years occurred in the winter months. The peak demands for 2006, 2007, and 2010 occurred in the summer months. On a weather-normalized basis, the system peak increased by a compound growth rate of 0.4 percent from 2006 to 2010.

Q. Please describe how LG&E and KU prepared their energy sales forecasts.

A. The energy forecast was developed separately for LG&E and KU. Forecast models are primarily econometric in nature and, as such, satisfy two critical forecasting requirements. First, each forecast incorporates specific local, or service territory, economic and demographic data. Second, this approach allows for the quantification of the relationships between electric sales and the variables to which they are related. Such factors as weather, employment, and prices provide for well-specified models that produce robust results.

While LG&E's forecast addresses retail sales, KU's energy forecast addresses three basic jurisdictional groups: (1) retail sales in Kentucky, (2) retail sales in Virginia, and (3) wholesale sales to Kentucky municipalities. The forecasts are disaggregated by class such as residential, commercial and industrial sales. The number of customers, as well as the use-per-customer for residential and commercial classes, is forecasted with the product of the two comprising the energy sales forecast. A textual description of the methodologies employed in the generation of the energy demand forecasts can be found in Volume II, Technical Appendix, pages 212-227 of the 2011 IRP, Case No. 2011-00140.

Q. Please describe how LG&E and KU prepared their joint forecast of hourly system demand and annual peak load.

A. As described in more detail in Volume II, Technical Appendix, pages 208 - 211 of the 2011 IRP, Case No. 2011-00140, the hourly demand forecast is developed based on the monthly sales forecast and class load shapes.

Q. How do the Companies help ensure that the load forecast is reasonable?

A. The Companies seek to ensure that their load forecast is prepared using sound methods by people who are qualified professionals. There are three practices that the Companies employ to help produce the most reasonable forecast possible:

1. Build and rigorously test statistically and economically sound mathematical models of the load forecast variables;
2. Use quality forecasts of future macroeconomic events, both nationally and in the service territory, that influence the load forecast variable; and

3. Thoroughly review and analyze the model output to ensure that the results make sense based on historical trends and the forecaster's own sense and understanding of long-term trends in electricity usage.

The end result is the best forecast that can be produced by experienced professionals using the best available methods, models, and data.

Q. Is the Joint Load Forecast used to prepare the 2011 IRP the most recent forecast?

A. No. Each spring, the Sales Analysis & Forecasting group at the Companies develops a new long-term sales and demand forecast. A 2012 joint load forecast was developed after the 2011 IRP was filed. The load forecast process used to develop the 2012 joint load forecast was the same as the process used to prepare the 2011 IRP.

Q. Is the 2012 Joint Load Forecast materially different from the 2011 IRP forecast?

A. No. The 2012 joint load forecast reflects a more recent view of the economy, updated expectations for consumer behavior, and updated forecasts for major customers. However, this does not cause material differences in total energy sales or peak hourly demand as seen in the table below comparing combined company energy sales and peak demand before the impact of DSM and interruptible load. In my opinion, these differences are not material from a long-term resource planning perspective.

	Combined Company Energy Sales (GWh)			Combined Company Peak Demand (MW)		
Year	2011 IRP	2012 Forecast	Percent Change	2011 IRP	2012 Forecast	Percent Change
2012	34,511	34,113	-1.15%	7,210	7,319	1.51%
2013	35,076	34,543	-1.52%	7,356	7,409	0.72%
2014	35,530	34,835	-1.96%	7,477	7,504	0.37%
2015	36,097	35,256	-2.33%	7,603	7,583	-0.26%
2016	36,615	35,741	-2.39%	7,654	7,705	0.66%
2017	37,074	36,126	-2.56%	7,760	7,789	0.37%

Q. In your opinion, are the methods and results of the forecasts reasonable?

A. Yes. The methods and models employed to develop the forecasts are widely used in the industry and are similar to what the Commission has reviewed and accepted in the past. The information and assumptions utilized by the models are reasonable because they are derived from reliable and reputable sources. The combination of sound methods and models with quality data produced a forecast of energy and peak demand growth that is consistent with the historical growth experienced by LG&E and KU. Therefore, based upon my experience and my review of the models, assumptions and the resulting forecasts, it is my opinion that the forecasts are reasonable.

<u>Section 2 – Impact of DSM Programs</u>

Q. Did the Companies consider the effects of their DSM programs when preparing the Joint Load Forecast?

A. Yes. As seen in the table below, the Companies project a load reduction of approximately 500 MW resulting from their DSM programs by the end of 2017.

Those savings are reflected in the Joint Load Forecast. Please see Table 8.(3)(e)(3) in the 2011 IRP to see the detailed annual peak and energy impacts.

	2011	2012	2013	2014	2015	2016	2017
DSM Peak Demand Reduction (MW)	220	272	320	378	418	459	500

<u>Section 3 – Business-as-Usual ("BAU") Resource Plan</u>

Q. Did you prepare any analysis of the Companies' future generation resource needs in the absence of changes in EPA regulations?

A. Yes. In the 2011 IRP, the Companies developed a resource plan for a scenario with no changes in EPA regulations. In this plan, the Cane Run, Green River, and Tyrone coal units are not retired. Based on a 16% reserve margin target, the next need for capacity per the BAU resource plan would be in 2018.

<u>Section 4 – The Impact of EPA Regulations on the Existing Generation Portfolio</u>

Q. Has the EPA recently issued new regulations that would impact the operation of coal-fired generating units?

A. Yes. In March 2011, the EPA issued a proposed rule aimed at reducing hazardous air pollutants (such as mercury, other metals, acid gases, and organic air toxics, including dioxins) from new and existing coal- and oil-fired electric utility steam generating units ("HAPs Rule"). This rule is expected to be final in November 2011. In August 2011, the EPA issued its final Cross-State Air Pollution Rule ("CSAPR") that provides limited allowances for NO_x and SO_2 emissions starting in 2012. In addition, the EPA's National Ambient Air Quality Standards ("NAAQS") will further restrict NO_x and SO_2 emissions beginning in 2016 and 2017. Key dates in the implementation of these regulations are summarized in the direct testimony of Gary H. Revlett in this case.

Q. What control technologies would be needed to comply with the proposed and existing EPA regulations?

A. To comply with the NAAQS, new NOx and SO_2 emission controls would need to be installed. These same technologies will aid in meeting CSAPR emission limits. The most effective and least-cost technology for complying with the HAPs rule will be to install a fabric filter baghouse ("baghouse").

Q. For what units did the Companies not propose new and/or upgraded emission controls in the 2011 Compliance Plan[2]?

A. No controls were proposed for the Cane Run, Green River, and Tyrone coal-fired steam generation units.

Q. Why were new controls not recommended for these units?

A. Cane Run would require extensive improvements to, or potential reconstruction of, the existing flue gas desulfurization units ("FGDs") to meet the new SO_2 standards as well as the installation of selective catalytic reduction units ("SCRs") to control NOx in order to comply with NAAQS regulations. The Green River and Tyrone Units do not have FGDs, so additional SO_2 controls would be required. All three stations would require the installation of baghouses to meet HAPs limits. The table below summarizes the controls needed to comply with the EPA regulations at the Cane Run, Green River, and Tyrone coal units.

[2] See the Companies' Applications for Certificates for Public Convenience and Necessity and Approval of Their 2011 Compliance Plan for Recovery of Environmental Surcharge, Case Nos. 2011-00161 and 2011-00162.

Unit	Control Technologies
Cane Run 4	FGD[3], SCR[4], Baghouse, SAM Mitigation
Cane Run 5	FGD, SCR, Baghouse, SAM Mitigation
Cane Run 6	FGD, SCR, Baghouse, SAM Mitigation
Green River 3	CDS[5] Baghouse
Green River 4	CDS Baghouse
Tyrone 3	CDS Baghouse

In the 2011 Compliance Plan, we compared the difference in present value of revenue requirements ("PVRR") between (a) installing controls and (b) retiring and replacing capacity. New controls were not recommended for the Cane Run, Green River, and Tyrone coal units because the PVRR analysis demonstrated that retiring and replacing the capacity was the least-cost environmental compliance solution.

Q. How were the cost estimates for environmental controls developed for these facilities?

A. The Companies contracted with Black & Veatch, an engineering consulting firm, to provide cost estimates for installing emission controls at each unit.

Q. How did the Companies analyze whether to build upgraded emissions controls versus retire and replace capacity?

A. The decisions to install controls were evaluated on a unit-by-unit basis based on the difference between the PVRR of installing controls and replacing the capacity. The analysis considers the impacts of each alternative on capital investment and operations and maintenance ("O&M") costs. Capital costs consist of the cost of environmental controls or, in the case of each retirement option, the cost of

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[3] Flue gas desulfurization.
[4] Selective catalytic reduction.
[5] Circulating dry scrubber.

replacement generation identified in the respective resource expansion plan. O&M costs include the system production costs associated with the unit dispatch resulting from each option.

The analysis was conducted using Strategist® resource planning software.[6] The Companies compile information regarding the cost of generation for each unit (e.g., fuel, variable O&M, and emission allowance costs), a description of the generation capabilities of each unit (e.g., capacity, heat rate curve, commitment parameters, emission rates, and availability schedules), a load forecast, the future spot market price of electricity, and the volumetric ability (transfer capability) to access the market to make economical power purchases (if and to the extent such exist). All of this information is brought together in Strategist® to model the economic operation of the Companies' generating system. This analysis is described in more detail in the 2011 Compliance Plan.

Q. What were the results of this analysis?

A. The table below summarizes the PVRR differences from the 2011 Compliance Plan between (a) installing controls and (b) retiring and replacing capacity. A negative value in the table indicates that retiring and replacing capacity is least cost. Installing controls on the Green River, Tyrone, and Cane Run 4 and 5 coal units is not cost-effective. In the case of Cane Run 6, the difference in PVRR between installing controls and retiring the unit is approximately $8 million. If the Companies were to install controls on Cane Run 6 and the PVRR of a future expenditure not

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[6] Strategist® is a proprietary resource planning computer model.

contemplated in this analysis exceeds $8 million, then installing controls would not be the least-cost option. Because the likelihood of this occurring is considered high, the Companies do not recommend installing environmental controls on Cane Run 6.

Unit(s)	PVRR Difference: Install Controls versus Retire/Replace Capacity
Cane Run 4	(88)
Cane Run 5	(58)
Cane Run 6	8
Green River 3	(69)
Green River 4	(94)
Tyrone 3	(1)

Q. Was any additional analysis performed for the retirement decision for Cane Run?

A. Yes. Since a significant reduction in the cost of controls for Cane Run could impact the Companies' ultimate recommendation regarding the Cane Run units, the Companies developed a further estimate for the cost of controls at Cane Run based on the recently constructed FGD system at Brown and the more detailed 2011 Black & Veatch studies for Ghent, Mill Creek, and Brown.[7] The revised capital estimate for Cane Run controls includes a common WFGD system and common limestone processing facilities, in addition to updated estimates for baghouse costs. The original and revised capital estimates for the cost of controls at Cane Run are summarized in the table below:

[7] Given the operating characteristics, age, and size of the units as well as the controls needed to comply with pending environmental regulations, the cost of controls at Green River and Tyrone could not be justified. No additional estimates were developed for these units.

Unit	Original Estimate: 2011 Compliance Plan ($M)	Revised Estimate ($M)[8]
Cane Run 4	295	133
Cane Run 5	310	144
Cane Run 6	399	180
Common	N/A	532
Total	1,004	990

The capital cost of controls in the revised estimate is $14 million lower than the original estimate. This reduction in capital cost equates to an approximately $14 million reduction in PVRR compared to the original estimate. However, the original cost estimates resulted in a PVRR for all Cane Run units of $138 million in favor of retirement. Clearly, the PVRR reduction associated with the lower capital cost does not offset this total.[9] Therefore, the review of the revised estimate for Cane Run controls does not change the Companies' decision to retire the Cane Run units.

Q. When will the generating facilities at Tyrone, Green River and Cane Run be retired?

A. Based on the timing of compliance with EPA regulations all of the units will be retired no later than the end of 2015.

<u>**Section 5 – Future Resource Needs and RFP for Capacity**</u>

Q. What impact does the retirement of Cane Run, Green River, and Tyrone have on the Companies' need for future generation resources?

A. The 2011 IRP provides a detailed analysis of the Companies' plan to meet future capacity and energy requirements at the lowest possible cost consistent with reliable

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[8] Values do not sum precisely to the total due to rounding.

[9] The common WFGD and limestone processing facilities in the revised estimate preclude the retirement of individual units at Cane Run.

supply. As in the 2011 Compliance Plan, we found in the 2011 IRP that the least-cost approach was to retire the Cane Run, Green River, and Tyrone coal units at the end of 2015. With the retirements of the Cane Run, Green River, and Tyrone coal units, the Companies have a capacity shortfall of 877 MWs beginning in 2016 as shown in the table below. Absent additional capacity, these retirements will result in a 2016 reserve margin of approximately 4% versus a target reserve margin of 16%.

(MW)	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Forecasted Peak Load	7,210	7,356	7,477	7,603	7,654	7,760	7,897
Peak Reductions[10]	390	442	501	544	585	626	664
Total Demand	6,821	6,915	6,976	7,059	7,070	7,135	7,234
Existing Resources	8,002	8,006	8,001	7,996	7,969	7,970	7,970
Retirements					(797)	(797)	(797)
Firm Purchases (OVEC)	154	152	152	152	152	152	152
Total Supply	8,156	8,158	8,153	8,148	7,324	7,325	7,325
16% Reserve Requirements	1,091	1,106	1,116	1,129	1,131	1,142	1,157
Difference from Target	243	137	61	(40)	(877)	(952)	(1066)
Reserve Margin	19.6%	18.0%	16.9%	15.4%	3.6%	2.7%	1.3%

The retirement of the Cane Run and Green River coal units also have an impact on the Companies' energy needs. The table below summarizes the energy produced from these units over the last five years.

Generation (GWh)	**2006**	**2007**	**2008**	**2009**	**2010**
Cane Run	3,575	3,537	3,401	3,235	3,263
Green River	640	997	962	625	889
Total	4,215	4,533	4,364	3,861	4,153
Capacity Factor					
Cane Run	72%	72%	69%	66%	66%
Green River	45%	70%	63%	41%	60%

[10] Peak reductions include the impacts of interruptible demands and demand-side management programs.

Q. What actions did the Companies take to address this forecasted capacity and energy shortfall?

A. As set forth in the 2011 IRP, the least-cost expansion plan to meet the Companies' capacity shortfall beginning in 2016 was the addition of a 3x1 907 MW combined cycle combustion turbine ("NGCC"). While the IRP is a complete resource assessment and acquisition plan that considers all of the Companies' supply-side technologies and demand-side resource alternatives, it does not consider alternatives that may be available from the marketplace. For this reason, the Companies issued a request for proposals ("RFP") in December 2010 for electric energy and capacity. Responses to the RFP included power purchase agreements and asset sale offers from gas, coal, nuclear, wind, biomass, and solar technologies.

Q. Please describe the RFP process.

A. On December 1, 2010, the Companies issued an RFP for capacity and energy to more than 116 potential energy suppliers. The RFP itself, the list of recipients, and the responses received are included as attachments to the Resource Assessment. The Companies requested proposals from parties with resources that would qualify as a Designated Network Resource ("DNR") for transmission purposes. The RFP did not limit responses to a particular set of fuels or generating technologies. The specified capacity range for the responses was broad: the RFP encouraged offers for firm summer and winter capacity ranging between 1 MW and 700 MW with the caveat that the Companies may procure more or less than 700 MW and may aggregate capacity and energy from multiple parties to meet its needs. The RFP cited the Companies' preference for longer-term proposals but did not exclude shorter-term proposals. In total, 18 parties responded to the RFP with 50 offers.

Q. How did you go about screening the responses?

A. The Companies' analysis of the RFP responses was completed in two phases. Phase I consisted of an initial screening of the responses through the use of a scoring system ("Phase I Screening") which evaluated attributes including cost, term, and site viability. The goal of the Phase I Screening process was to select the top candidates for each technology for further evaluation. Phase II of the analysis evaluated the top candidates (and various combinations of the top candidates) from the Phase I Screening in more detail. Phase II was completed in two parts and included the Companies' self-build alternatives. A detailed summary of the Companies' analysis of RFP responses is included in the 2011 Resource Assessment.

Q. What alternatives were considered for new generation at Cane Run?

A. The preliminary Phase II Screening identified that RFP offers for the purchase of the Bluegrass Generation Company, LLC's simple cycle combustion turbines ("SCCT") in Oldham County in combination with a newly constructed 605 MW 2x1 NGCC resulted in lower PVRR than a single 3x1 NGCC. Therefore, the Companies proceeded with evaluating the 605 MW 2x1 NGCC and two additional 2x1 NGCC configurations with the Bluegrass Generation units rather than continue evaluation of the higher cost 3x1 NGCC. Each configuration had a different amount of duct-firing capacity. The 605 MW unit has 45 MW of duct firing capacity. The 640 and 690 MW units have 80 and 130 MW of duct firing capacity, respectively.

Q. Did you consider a coal unit as replacement generation for Cane Run?

A. No. In the 2011 IRP analysis, coal was not selected as part of the least-cost resource plan so it was not deemed prudent to invest the resources necessary to develop a site specific cost estimate for a new coal unit at Cane Run.

Q. How were the self-build options evaluated alongside the responses to the RFP?

A. The Phase II Screening of RFP responses was completed in two parts. In addition to the RFP responses, in the preliminary Phase II Screening, we evaluated the generic NGCC options considered in the development of the 2011 IRP. For the final Phase II Screening, the Companies, with the assistance of HDR engineering firm, developed independent cost estimates for three different NGCC configurations. Each estimate assumed the NGCC would be constructed at the Cane Run site. In the final Phase II Screening, we evaluated these alternatives as well as other options from the preliminary Phase II Screening.

Q. What were the results of the RFP and self-build analysis?

A. Based on the RFP and self-build analysis, the least-cost alternative for meeting the future capacity and energy needs of the Companies is to build a 640 MW 2x1 NGCC at the Cane Run site and purchase from Bluegrass Generation its existing SCCT facility in LaGrange, Kentucky.

Q. How will the Cane Run NGCC complement the Companies' existing generation fleet?

A. The Cane Rune NGCC will provide intermediate energy to the Companies' native load customers. Based on the historical operation of the Cane Run and Green River coal units, the Cane Run NGCC will complement the Companies' generation fleet well.

Q. Please explain how natural gas will be procured and transported to the new Cane Run NGCC.

A. The Companies plan to purchase natural gas from a portfolio of marketers and producers, just as they do today for their existing simple-cycle turbines. Once procured, the gas will be transported by Texas Gas Transmission to a new interconnection to be built near Penile Road in Jefferson County. From that point, the gas will move to the Cane Run site via a new 8.1 mile pipeline to be constructed and operated by the Companies.

Q. Why are the Companies' proposing to purchase the Bluegrass CTs in 2012?

A. The Companies are proposing to purchase the Bluegrass CTs in 2012 for the following reasons:

1. The purchase price is very attractive. The cost of the Bluegrass CTs (approximately $220/kW) is less than 30% of the cost of a new SCCT as set forth in the 2011 IRP.
2. The Bluegrass CTs are available for sale now. It is unclear whether these units will be available for sale in the future. Furthermore, given the potential for other unit retirements resulting from the proposed and existing EPA regulations, it is reasonable to assume that the demand (and price) for these units could increase over time.
3. The Bluegrass CTs will help the Companies manage reliability risks associated with reduced maintenance at the Cane Run, Green River, and Tyrone stations as they approach retirement.
4. The Bluegrass CTs will help the Companies manage development risks for the Cane Run NGCC unit.
5. Under the Clean Air Act, regulated facilities are required to comply with regulations such as the Hazardous Air Pollutants rule no later than three years after the effective date of the regulation, with a one-year extension available under certain circumstances. The Companies have assumed that this period

will be extended by one year at the request of the Commonwealth of Kentucky. The Bluegrass CTs will help the Companies manage the risk of this extension not being granted.

Q. Are there any other benefits of purchasing the Bluegrass CTs?

A. Yes. Purchasing all three Bluegrass CTs (versus only two CTs) will enable the Companies to defer the need for future capacity by one year.

Q. Were new DSM options considered as alternatives in the evaluation of RFP responses?

A. Not explicitly. The cost of new generating capacity is an input in the evaluation of new DSM programs. Since the cost of capacity from the Blue Grass CTs is less than the cost of new generating capacity used to evaluate the Companies' DSM programs, it follows that any DSM programs that were previously uneconomic would continue to be uneconomic.

<u>Section 6 – LG&E/KU Ownership of Cane Run NGCC and the Bluegrass CTs</u>

Q. Did you have any involvement in determining the ownership share for LG&E and KU for the Cane Run NGCC and the Bluegrass CTs?

A. Yes. The Generation Planning department prepared an analysis of how the retirement of Cane Run, Green River and Tyrone when combined with the procurement of new capacity would impact the respective reserve margins and energy supply of LG&E and KU.

Q. What methodologies were used to determine the ownership shares for the Cane Run NGCC and the Bluegrass CTs?

A. The methodologies used to establish ownership shares for both facilities are consistent with the methodologies used to establish ownership shares for the Trimble

County CTs and the Trimble County 2 coal unit. Both methodologies are discussed in more detail in the 2011 Resource Assessment. Since the Cane Rune NGCC will contribute a significant amount of energy to the Companies' native load customers, its ownership was based on the expected energy benefits to each company. To determine these benefits, the production costs associated with the Companies' existing generation portfolio and 30-year least-cost expansion plan (including the Cane Run NGCC) were compared to the production costs associated with its generation portfolio and a 30-year expansion plan that included only CTs. The ownership shares were established to be consistent with each company's share of the net present value of differences in production costs between these portfolios. This methodology is consistent with the methodology used to determine the ownership share for the Trimble County 2 coal unit.

The ownership shares for the Bluegrass CTs were determined so that each utility's projected reserve margin was equalized in the in-service year. This methodology is consistent with the methodology used to determine ownership shares for the Trimble CTs.

Q. What is your recommendation to the Commission?

A. Based on my testimony and the analyses performed under my direction and contained in the 2011 Resource Assessment, it is my recommendation that the Commission should approve the Cane Run construction project and the Oldham County acquisition as least-cost resources for ensuring adequate generating capacity while complying with current and proposed environmental laws.

Q. Does this conclude your testimony?

A. Yes it does.

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 Marketing 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

David S. Sinclair

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 14th day of September 2011.

Tammy J. Elzy (SEAL)

Notary Public

My Commission Expires:

November 9, 2014

APPENDIX A

David S. Sinclair

Vice President, Energy Marketing
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 Marketing
2000-2008 – Director, Energy Planning, Analysis and Forecasting

LG&E Energy Marketing, Louisville, Kentucky
1997-1999 – Director, Product Management
1997-1997 (4th 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

Mr. Voyles

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

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 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 LAGRANGE, KENTUCKY	)	**CASE NO. 2011-_______**

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

Filed: September 15, 2011

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

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

Q. Please describe your job responsibilities.

A. I have 35 years of experience in the utility industry. In addition to oversight of the Transmission system, my current responsibilities include support of the generating fleet for both Companies with Generation Engineering and System Lab departments. I am also responsible for Project Engineering, the department that oversees large construction projects including generating stations, pollution control equipment, and on-site byproduct storage facilities. Prior to this assignment, I was the officer responsible for the generating fleet. Earlier in my career, I served as the corporate environmental director.

Q. Have you previously testified before this Commission?

A. Yes. I testified in the Companies' 2009 environmental compliance plan cases,[1] and I testified in a number of earlier proceedings, including LG&E's original application for recovery of its 1995 Environmental Compliance Plan.[2] I have also testified in the

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[1] Case Nos. 2009-00197 (KU 2009 ECR Plan) and 2009-00198 (KU 2009 ECR Plan).

[2] *In the Matter of: The Application of Louisville Gas and Electric Company for Approval of Compliance Plan and to Assess a Surcharge Pursuant to KRS 278.183 to Recover Costs of Compliance With Environmental Requirements For Coal Combustion Wastes and By-Products*, Case No. 93-332.

Companies' currently pending environmental cost surcharge cases, Case Nos. 2011-00161 and 2011-00162

Q. Are you sponsoring any exhibits?

A. Yes. I am sponsoring the following exhibit:

Exhibit JNV-1: Bluegrass Generation Company, LLC Asset Purchase Agreement

Q. What is the purpose of your testimony?

A. As discussed in Mr. Sinclair's and Mr. Revlett's testimonies, the Companies have concluded that the most cost-effective method of complying with the final and soon-to-be-final Environmental Protection Agency ("EPA") clean air emission regulations as they impact the existing coal-fired generating facilities at Cane Run, Green River and Tyrone is to retire the existing facilities at those locations and construct a gas-fired combined cycle facility on Cane Run Station property. The combined effect of those retirements is that approximately 800 MW will need to be replaced. Additionally, the Companies' 2012 Medium Term Joint Load Forecast indicates, inclusive of the retirements, that 877 MW will be needed in 2016. To meet those needs, the Companies have decided to construct new natural gas combined cycle facilities at Cane Run and purchase existing natural gas simple cycle facilities in Oldham County. My testimony will explain the details of those construction and purchase efforts.

CONSTRUCTION AT CANE RUN

Q. Please describe the facilities the Companies propose to construct at Cane Run.

A. The Companies have proposed the construction of a new 640 MW net summer rating natural gas combined cycle ("NGCC") generating unit utilizing F-class gas turbine technology at the Cane Run Station. A map of the proposed construction site is attached to the Companies' Joint Application.

Q. Please explain the advantages of using an existing site for construction of Cane Rune NGCC.

A. The existing Cane Run site contains 510 acres in southwestern Jefferson County and is suitable for Cane Rune NGCC. The Site Assessment Report attached to Mr. Revlett's testimony shows that the site complies with the requirements of KRS 278.216.

Using an existing site for Cane Run NGCC will allow the Companies to utilize the existing river water intake structure and the existing Kentucky Pollutant Discharge Elimination System water discharge point. Cane Run NGCC will likely utilize (subject to studies to be performed by the Companies' Independent Transmission Organization, Southwest Power Pool (SPP)) five of the seven existing 138 KV transmission circuits existing on the site. While electric transmission changes will likely include adding 345KV equipment at Cane Run, the Companies do not expect circumstances that would require new high voltage electric transmission lines for which transmission CPCNs from the Commission would be required.

The use of the existing Cane Run site also minimizes development risk associated with air permitting. Although Cane Run NGCC will still be required to obtain an air permit and to comply with all applicable environmental requirements, the utilization of the existing emissions of Cane Run units 4, 5 and 6 will allow the proposed unit to "net out" of the Prevention of Significant Deterioration air permitting process that would be required for a new "green field" site. Using the Cane Run site also eliminates the need to purchase additional property (for the generation site) and avoids additional costs related to site infrastructure for items such as utilities, security, communications, etc.

Q. Do the Companies currently own any NGCC units?

A. No, but the Companies are familiar with the technology involved with NGCC units. The Companies currently operate a fleet of F-class gas turbines and are familiar with the operation and maintenance requirements of gas turbines. The Companies' existing coal-fired steam fleet utilizes many steam turbines and heat-to-steam boilers. The operation and maintenance of the steam turbine will be similar to the existing units. Although the heat recovery steam generator ("HRSG") can be compared to a boiler, it will have somewhat different O&M requirements. The Companies have visited and studied operating combined-cycle plants to understand construction and operating challenges. The Electric Power Research Institute ("EPRI") has developed extensive recommendations on HRSG design to minimize maintenance issues. The EPRI recommendations are being reviewed and incorporated into the Cane Run NGCC technical specifications being developed by the Companies and their Owner's Engineer, HDR. HDR has considerable NGCC experience. In summary, the Companies have the necessary expertise to construct and operate Cane Run NGCC.

Q. Are there significant environmental benefits of using NGCC technology at Cane Run?

A. Yes. NGCC technology does not produce combustion by-products that would require the same landfill needs as coal-fired technology which results in obvious environmental benefits. Additionally, when compared to existing facilities at Cane Run, emission of particulate matter ("PM") and NO_X will be greatly reduced, while emissions of SO_2 will be all but eliminated. As Jefferson County is proposed to be classified as non-attainment for SO_2, the county will gain significant ground toward meeting the new National Ambient Air Quality Standard for SO_2. The reduction in SO_2 and NO_X emissions are also incorporated into meeting the Companies' requirements under the final Cross-State Air Pollution Rule allowance allocations.

Q. Please describe the construction plans for Cane Run NGCC.

A. The timeline for constructing the NGCC unit is constrained by the need to have the unit operational prior to January 1, 2016, when the retirement of nearly 800 MW of coal-fired capacity at Cane Run, Tyrone, and Green River is planned due to impending EPA regulations. The timing of the construction plans is based on the provisions from the Clean Air Act, as amended, that allow the permitting authority to grant a one year extension of the compliance date under the Hazardous Air Pollutant Rule. Once regulatory approvals are obtained, the Companies will make every effort to construct and place the Cane Run NGCC plant into commercial operation prior to the retirements of the coal-fired generating units at Cane Run, Green River and Tyrone. Without timely replacement of generating capacity at the Cane Run site, current internal transmission studies indicate reliability concerns may result under some system contingencies. The Companies have already begun work on developing the specifications for the gas turbine, HRSG, steam turbine and the prime engineering, procurement, and construction contract. The Companies plan to issue a Request for Quotations on these four main contracts within the next six months.

As described in Mr. Sinclair's testimony, the Companies have concluded that, when combined with the acquisition of three combustion turbine peaking units from Bluegrass Generating Company, LLC, the least cost option for environmental compliance is to self-build Cane Run NGCC. The self-build process will include an

Owner's Engineer ("OE") supporting our Project Engineering and Power Production staffs. The Companies contracted with the engineering firm HDR and will likely utilize that firm as the OE to perform engineering services throughout 2011, as well as for the optimization of the NGCC system design. The OE will also assist with environmental permitting and procurement efforts in 2012. Once the bids for the equipment and construction packages are received and analyzed, purchase orders for long lead time equipment can be issued. With timely regulatory approval and receipt of the construction permits, completion of Cane Run NGCC is expected to occur prior to the end of 2015.

Q. Please describe the construction timeline for Cane Run NGCC.

A. Once the regulatory approvals are received, the construction process will begin. The critical time element for construction of the NGCC is the steam turbine. After the purchase order for the steam turbine is placed, manufacture requires approximately 20 months, with delivery three months later. Erection of the steam turbine typically requires eleven months. Following that, mechanical completion of the HRSG pressure piping takes approximately one month. Startup, final testing and commissioning activities generally require two months, and, after that, commercial operation will occur. In total, the Companies estimate that it will take approximately 37 months from execution of the first major equipment contract (for the steam turbine) until commercial operation, not considering time required for permitting and regulatory approvals. As stated above, while no construction work has begun on the NGCC, the Companies are preparing specifications and Requests for Quotations on equipment and construction packages so they can be in a position to issue the steam turbine purchase order within 60 days of Commission approval.

Q. Are there permits that will be required as part of the construction?

A. Yes. The environmental permits are discussed in Mr. Revlett's testimony. In addition, permits normally required for construction (plumbing, building, etc.) will be obtained at the appropriate time as necessary.

Q. Why are the Companies filing for a CPCN at this time?

A. The Companies are requesting a CPCN at this time so that they can ensure compliance with the requirements in the EPA regulations. We recognize that it may take a number of months for approval of the CPCN filing and the necessary pre-construction environmental permits. We also know from experience that the large scope of the project will require an intensive process of qualifying suppliers, evaluation of bids and earnest negotiations. Given the expected increase in demand for gas turbines driven by these EPA regulations, it is critical for the Companies to be able to commit to turbine purchases as soon as possible. In light of the complexity of the construction project and the anticipated market impacts due to the EPA regulations, difficulties and resulting delays are possible. Taking all of that into account, in order to have Cane Run NGCC operational prior to January of 2016, we believe it is imperative to seek Commission approval at this time.

Q. Have the Companies performed any construction work for Cane Run NGCC at this time?

A. No. However, as indicated previously, the Companies are proceeding with engineering and bidding processes for the large contracts. Unless entering into one or more of those contracts is necessary to ensure timely environmental compliance, address transmission system reliability concerns, or guard against significant market price increases or equipment delivery risks, the Companies will not enter into contracts prior to approval by this Commission. Should entering into contracts be necessary prior to final regulatory approvals, any such contracts will have cancellation clauses with specific deferment schedules contingent on receiving the necessary regulatory approvals (including the approval of this Commission).

Q. Will any natural gas transmission work have to be performed in connection with the Cane Run NGCC construction?

A. Yes. The Companies contracted with Energy Management and Services Company to perform a route selection study for a gas pipeline to serve Cane Run NGCC. They recommended an approximately eight mile route mostly along existing electric Rights of Way ("ROW"). Additionally, the Companies contracted with EN Engineering to survey the recommended route and confirm construction feasibility. Additional archeological and geotechnical studies along the proposed ROW continue. Approximately 900 feet of new ROW parallel to Penile Road and an existing gas ROW will be required. Also, approximately two miles of gas pipeline ROW will be required within existing electric easements. Finally, a site for the Texas Gas delivery point at Penile Road will be required. The cost estimate for a line adequate to serve the planned unit is included in the overall cost estimates below. Construction of the gas pipeline is scheduled in 2014.

Q. What are the expected construction costs of Cane Run NGCC?

A. The total project cost is expected to be $583 million for generation, including the costs of the gas pipeline. No costs of decommissioning the current Cane Run facilities are included in the estimate.

Q. What will be the annual operating cost of Cane Run NGCC?

A. In the Resource Assessment, fixed and variable operating and maintenance costs for the Cane Run combined cycle unit is assumed to be \$6.55/kW-year and \$3.64/MWh, respectively.[3] These operating cost estimates are derived from the Combined Cycle Feasibility Study Life Cycle Cost Analysis prepared by HDR with input from Companies' Power Production organization. The Cane Run combined cycle unit is expected to generate approximately 1,250 GWh per year beginning in 2016, resulting in an annual total fixed and non-fuel operating cost of approximately \$9 million.

BLUEGRASS GENERATION COMPANY, LLC PURCHASE

Q. Will Cane Run NGCC provide sufficient capacity and energy to replace the retirements and meet projected need?

A. No. As described by Mr. Sinclair, taking into consideration the contemplated retirements and the Companies' projected load forecast, the Companies will have a capacity shortfall of 877 MW in 2016. Cane Run NGCC will provide 640 MW, but an additional source must be obtained to meet the shortfall. As part of the RFP process Mr. Sinclair describes, the Companies determined that the least cost option to meet the shortfall is to purchase existing generation assets from Bluegrass Generation Company, LLC located in LaGrange, Kentucky.

Q. Please describe the Bluegrass Generation assets to be purchased.

A. The Companies propose to purchase existing Bluegrass Generation facilities in LaGrange, Kentucky which include three natural gas simple cycle combustion turbines. Those facilities are already in operation. The Companies have already

[3] These values are quoted in 2010 dollars. The fixed operating cost does not include the cost for firm gas delivery. The variable operating cost does not include start up fuel costs.

reached an agreement with Bluegrass Generation that allows for the purchase to occur in 2012.

The Bluegrass Generation assets entered service in June of 2002. The assets consist of three Siemens-Westinghouse 501 FD2 combustion turbines (F Class) operating in simple cycle as peaking units. The combustion turbines provide 495 MW of summer capacity. Since commercial operation began, each unit has accumulated approximately 1000 operating hours and 340 starts.

Q. Please describe the site upon which the Bluegrass Generation assets are located.

A. The Bluegrass Generation assets sit on a 60-acre site in Oldham County (see map attached to the Companies' Joint Application). The facilities are currently leased from Oldham County as a means to fix property taxes at a known value. The Asset Purchase Agreement between Bluegrass Generation and KU (see Exhibit JNV-1[4]) allows for Bluegrass Generation to terminate the lease and requires Bluegrass Generation to provide good title to the Companies at closing.

Q. How is natural gas supplied to the Bluegrass Generation facilities that are proposed to be purchased?

A. Currently, interstate gas transportation to the facilities is provided by Texas Gas on an interruptible basis. The Companies anticipate firm gas transportation for the facilities will be purchased from Texas Gas as needed to support continuous availability.

Q. Are there any environmental concerns with the Bluegrass Generation facilities that are proposed to be purchased?

[4] At the time of filing this testimony, the Asset Purchase Agreement has not been executed. However, it is substantially complete and agreement has been reached on all material terms. Therefore, Exhibit JNV-1 is unexecuted, but the Companies will make a supplemental filing with the executed Asset Purchase Agreement as soon as possible.

A. No. The existing site air permit held by Bluegrass Generation limits NO_X to 95 tons per year and CO to 245 tons per year. The limiting factor on plant operations will be the total number of unit starts. Each unit start emits over one ton of CO while a full load operating hour only emits about 17 pounds of CO. With a typical operation of 4 hours per unit start, the permit will allow 222 unit starts per year which is significantly more than the anticipated operation of the peaking units.

Q. How much will it cost to purchase the Bluegrass Generation assets?

A. At the proposed purchase price of $110 million, the resulting unit price for summer capacity is $222/kW. That price is significantly cheaper than the comparable $850/kW estimate for constructing summer capacity at a green field site in today's dollars. This green field estimate was included in the Companies' supply-side resource study as part of their Integrated Resource Plan. As discussed in Mr. Sinclair's testimony, purchase of the Bluegrass Generation assets is part of the least cost solution to the Companies' needs.

Q. How much will it cost to operate the Bluegrass Generation assets on an annual basis?

A. In the Resource Assessment, fixed and variable operating and maintenance costs for the Bluegrass Generation combustion turbines are assumed to be $4.67/kW-year and $15.12/MWh, respectively.[5] These operating cost estimates are derived from EPRI data and are consistent with the Companies' experience with similar simple cycle gas turbines in its fleet. The Bluegrass Generation combustion turbines are expected to

[5] These values are quoted in 2010 dollars. The fixed operating cost does not include the cost for firm gas delivery. The variable operating cost does not include start up fuel costs.

generate approximately 170 GWh per year beginning in 2013, resulting in an annual total fixed and non-fuel operating cost of approximately $5 million.

ELECTRIC TRANSMISSION CONSIDERATIONS

Q. How do the Companies plan to transmit power from Cane Run NGCC and the Bluegrass Generation assets to serve their load?

A. Power generated by Cane Run NGCC will utilize existing transmission infrastructure with modifications to the transmission facilities at or near the Cane Run station site. The Bluegrass Generation assets are electrically interconnected to the Companies' transmission system at a 345 kV level.

Consistent with the Companies' Open Access Transmission Tariff (OATT), electric transmission service and new generation interconnections are subject to studies to be performed by SPP, the Companies' Independent Transmission Organization. The Companies have submitted the necessary requests to SPP and have executed study agreements per the OATT. At this time, the final studies have not yet been completed.

As a part of the Resource Assessment, the Companies' Transmission staff analyzed the possibility of adding Cane Run NGCC and the Bluegrass Generation assets as Designated Network Resources. That analysis, including cost estimates, attempts to identify the transmission work expected from the required SPP studies. Examples of some projects identified in the Companies' analysis include installation of a transformer, generator breakers, switches, re-conductoring, and relocation of some transmission structures and conductors.

Q. What will these electric transmission upgrades cost?

A. The total estimated cost of all projects which may be required in 2016 or earlier to support the Cane Run NGCC and the Bluegrass Generation asset additions is $39 million. This $39 million estimate includes $5 million of projects for the Bluegrass units and $34 million of projects for Cane Run NGCC. It is important to note that these cost estimates continue to be refined as new information becomes available and further engineering is performed. Of course, to the extent Commission approval is required for any electric transmission work, timely application will be made.

Q. Will the retirement of Green River require any electric transmission upgrades?

A. Yes. The Companies' Transmission staff has analyzed the effects on transmission of retiring Green River. That analysis, including cost estimates, attempts to identify the transmission work that will be necessary to maintain transmission reliability after Green River is retired. Examples of some projects identified in the Companies' analysis include installation of transformers, breakers and switches, and some transmission structures and conductors. Based on the current engineering assessments, the estimated cost of these projects is approximately $15 million. Here again, to the extent Commission approval is required for any electric transmission work, timely application will be made.

Q. What is your recommendation to the Commission?

A. I recommend that the Commission should approve the Can Run NGCC construction project and the Bluegrass Generation acquisition as cost-effective methods of ensuring adequate generating capacity while complying with current and proposed environmental laws. Further, as described above, the Companies need to move forward with the solutions proposed in this matter as soon as possible. In order to take advantage of the favorable pricing obtained in the Asset Purchase Agreement with Bluegrass Generation, the Companies will need to close on that transaction in June 2012. Therefore, the Companies respectfully request the Commission to issue its decision in this matter no later than April 30, 2012.

Q. Does this conclude your testimony?

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.

John N. Voyles, Jr.

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 14th day of September 2011.

Tammy J. Elzy (SEAL)
Notary Public

My Commission Expires:

November 9, 2014

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

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

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 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 LAGRANGE, KENTUCKY	)	**CASE NO. 2011-_______**

DIRECT TESTIMONY OF
LONNIE E. BELLAR
VICE PRESIDENT, STATE REGULATION AND RATES
KENTUCKY UTILITIES COMPANY
AND LOUISVILLE GAS AND ELECTRIC COMPANY

Filed: September 15, 2011

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

A. My name is Lonnie E. Bellar. I am the Vice President, State Regulation and Rates for Kentucky Utilities Company ("KU") and Louisville Gas and Electric Company ("LG&E"). I am employed by LG&E and KU Services Company, which provides services to LG&E and KU (collectively "the Companies"). My business address is 220 West Main Street, Louisville, Kentucky, 40202. A complete statement of my education and work experience is attached to this testimony as Appendix A.

Q. Have you previously testified before this Commission?

A. Yes. I have previously testified before this Commission in numerous proceedings, including the Companies' most recent base rate cases (Case Nos. 2009-00548 (KU) and 2009-00549 (LG&E)) and environmental cost recovery compliance plan proceedings (Case Nos. 2009-00197 (KU) and 2009-00198 (LG&E)).

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to discuss issues of cost, financing, joint participation, and other regulatory approvals relating to the Companies' plans to construct a new natural gas combined cycle generating facility at Cane Run ("Cane Run NGCC") and purchase an existing natural gas simple cycle generating facility from Bluegrass Generation Company, LLC located in LaGrange, Kentucky. I will describe the Companies' position regarding rate recovery associated with the construction of Cane Run NGCC and purchase of the Bluegrass Generation assets. I will conclude by recommending that the Commission approve the Companies' Application and authorize the construction and purchase as proposed.

Q. How much will it cost to build Cane Run NGCC and how much will it cost to purchase the Bluegrass Generation assets?

A. As discussed in the testimony of John Voyles, the estimated cost of constructing Cane Run NGCC is $583 million which includes the cost of building a natural gas supply transmission line to serve the new facilities. The proposed purchase price of the Bluegrass Generation assets in Oldham County is $110 million.

Q. As a result of constructing Cane Run NGCC and purchasing the Bluegrass Generation assets, will there be additional electrical transmission costs?

A. Yes. The additional electrical transmission costs are discussed in John Voyles' testimony and in the Resource Assessment attached to David Sinclair's testimony.

Q. How do the Companies plan to finance the Cane Run NGCC construction and Bluegrass Generation purchase costs?

A. The Companies expect to finance the costs of both projects with a combination of new debt and equity. The debt is expected to be a combination of short-term debt, in the form of commercial paper notes, loans from affiliates via the money pool, and/or bank loans. To the extent Cane Run NGCC construction costs qualify for state volume cap, the Companies will apply for an allocation of that cap and finance Cane Run NGCC via tax-exempt bonds if it is economically reasonable to do so. The mix of debt and equity used to finance the projects will be determined so as to allow the Companies to maintain their strong investment-grade credit ratings. The Companies will continue to evaluate financing alternatives as these projects progress and will seek the approval of the Commission pursuant to KRS 278.300 to the extent required.

Q. How will the costs of the projects be allocated between KU and LG&E?

A. As described in Paul Thompson's direct testimony, LG&E and KU will jointly own Cane Run NGCC and the assets purchased from Bluegrass Generation. KU will own 78% and LG&E will own 22% of Cane Run NGCC. As for the Bluegrass Generation assets, KU will own 31% and LG&E will own 69%. The costs of the two projects will be shared in accordance with those ownership percentages.

Q. Are there any other regulatory approvals or permits needed for the Cane Run NGCC project?

A. Yes. As discussed in the testimony of Mr. Revlett, the Companies will need certain environmental permits. At this time, the Companies do not believe that Certificates of Public Convenience and Necessity ("CPCN") will be necessary for the electric transmission needs that will arise as a result of the Green River, Tyrone and Cane Run retirements, the Cane Run NGCC construction or the Bluegrass Generation purchase. However, those issues are being studied. To the extent Commission approval is required, the Companies will make timely application.

Additionally, as mentioned in the Companies' Application, they are requesting the Commission to issue a Site Compatibility Certificate pursuant to KRS 278.216. The Companies have submitted their Site Assessment Report in support of that request as an attachment to Gary Revlett's testimony.

Finally, based on the planned joint ownership of Cane Run NGCC and the Bluegrass Generation assets, KU plans to seek affiliate transaction approval from the Virginia State Corporation Commission.

Q. Why are the Companies not requesting a CPCN for any electric transmission facilities as part of this proceeding?

A. As mentioned above, the Companies are studying the issue of electric transmission needs, and, at this time, do not believe that electric transmission CPCNs will be required. Additionally, there are significant differences associated with the timing of a Commission decision on the Application in this case and a Commission decision on an electric transmission CPCN case. Specifically, KRS 278.020 places no specified deadline for a Commission decision in this case (the Companies have requested a decision by April 30, 2012 for the contractual and construction timing needs set forth in John Voyles' testimony), whereas electric transmission line CPCN cases must be decided within 120 days after an application is filed pursuant to 807 KAR 5:120.

Q. Will the Companies need to construct a natural gas transmission line for the supply of gas to Cane Run NGCC?

A. Yes. As described in John Voyles' testimony, an approximately eight mile gas transmission line will be necessary to serve Cane Run NGCC. A route selection study has been performed and the route will be primarily in existing rights of way for electric facilities.

Q. Are the Companies seeking to recover the costs associated with Cane Run NGCC and the Bluegrass Generation purchase at this time?

A. No. The Companies are not presently seeking cost recovery for these projects. However, the Companies do expect that they will seek cost recovery in future general rate cases.

Q. What are the expected rate impacts for the Cane Run NGCC and Bluegrass Generation purchase?

A. Based on the ownership allocations described above, the expected rate impact (inclusive of fuel) for KU is 4% while, LG&E will see little or no impact. When the Companies provided rate impact estimates in connection with its environmental cost recovery press release, those estimates were based on the assumption that LG&E would own 100% of Cane Run NGCC and KU would own 100% of the Bluegrass Generation assets. However, as the Companies further studied the issue of ownership, they determined that the joint ownership allocation described above is the most appropriate. Therefore, the rate impact for each company needed to be adjusted.

Q. Is it reasonable to project the book values of the assets to be retired at Cane Run, Tyrone and Green River as of the planned retirement dates?

A. No. The Companies plan to perform a depreciation study based on data as of December 31, 2011. The results of that study will change the depreciation rates for these facilities. It is anticipated that the depreciation study will be filed in connection with each individual Company's next base rate case.

Q. Do you have a recommendation for the Commission in this case?

A. Yes. It is my recommendation that the Commission grant the Companies' Application and approve the planned construction of Cane Run NGCC, the purchase of the Bluegrass Generation assets and the request for a Site Compatibility Certificate.

Q. Does this conclude your testimony?

A. Yes, it does.

VERIFICATION

COMMONWEALTH OF KENTUCKY)
) SS:
COUNTY OF JEFFERSON)

The undersigned, **Lonnie E. Bellar**, being duly sworn, deposes and says that he is Vice President, State Regulation and Rates for Louisville Gas and Electric Company and Kentucky Utilities 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.

Lonnie E. Bellar

Lonnie E. Bellar

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 14th day of September 2011.

Tammy J. Elzy (SEAL)

Notary Public

My Commission Expires:

November 9, 2014

APPENDIX A

Lonnie E. Bellar

Vice President, State Regulation and Rates
Louisville Gas and Electric Company and Kentucky Utilities Company
220 West Main Street
Louisville, Kentucky 40202
(502) 627-4830

Education

Bachelors in Electrical Engineering;
University of Kentucky, May 1987
Bachelors in Engineering Arts;
Georgetown College, May 1987
E.ON Academy, Intercultural Effectiveness Program: 2002-2003
E.ON Finance, Harvard Business School: 2003
E.ON Executive Pool: 2003-2007
E.ON Executive Program, Harvard Business School: 2006
E.ON Academy, Personal Awareness and Impact: 2006

Professional Experience

LG&E and KU Services Company	
Vice President, State Regulation and Rates	Nov. 2010 – Present
E.ON U.S. LLC	
Vice President, State Regulation and Rates	Aug. 2007 – Nov. 2010
Director, Transmission	Sept. 2006 – Aug. 2007
Director, Financial Planning and Controlling	April 2005 – Sept. 2006
General Manager, Cane Run, Ohio Falls and Combustion Turbines	Feb. 2003 – April 2005
Director, Generation Services	Feb. 2000 – Feb. 2003
Manager, Generation Systems Planning	Sept. 1998 – Feb. 2000
Group Leader, Generation Planning and Sales Support	May 1998 – Sept. 1998
Kentucky Utilities Company	
Manager, Generation Planning	Sept. 1995 – May 1998
Supervisor, Generation Planning	Jan. 1993 – Sept. 1995
Technical Engineer I, II and Senior, Generation System Planning	May 1987 – Jan. 1993

Professional Memberships

IEEE

APPENDIX A

Civic Activities

E.ON U.S. Power of One Co-Chair – 2007
Louisville Science Center – Board of Directors – 2008
Metro United Way Campaign – 2008
UK College of Engineering Advisory Board – 2009

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

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 SITE COMPATIBILITY CERTIFICATE	)	
FOR THE CONSTRUCTION OF A COMBINED	)	CASE NO. 2011-_______
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 LAGRANGE, KENTUCKY	)	

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

Filed: September 15, 2011

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

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

Q. Have you previously testified before this Commission?

A. Yes, I testified before the Commission during the proceedings in the Companies' 2006 Environmental Compliance Plans (Case Nos. 2006-00206 (KU) and 2006-00208 (LG&E)). I have also sponsored responses to data requests in a number of proceedings before the Commission, including the Companies' 2009 Environmental Compliance Plan proceedings (Case No. 2009-00197 (KU) and 2009-00198 (LG&E)). Finally, I have testified in the Companies' currently pending environmental cost surcharge cases, Case Nos. 2011-00161 and 2011-00162.

Q. Are you sponsoring any exhibits?

A. Yes, I am sponsoring the following exhibits:

Exhibit GHR-1: Chart of Permits

Exhibit GHR-2: Site Assessment Report

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to identify the environmental regulatory requirements that caused the need for the Companies to examine their generation fleet to determine whether it would be more cost-effective to install pollution control facilities or to retire and replace certain generation units. As described in Mr. Sinclair's testimony, the Companies have determined that the most cost-effective compliance strategy is to retire the facilities at Green River, Tyrone and Cane Run and to replace that retired capacity by constructing new natural gas combined cycle facilities at Cane Run ("Cane Run NGCC") and by purchasing natural gas simple cycle facilities from Bluegrass Generation Company, LLC located in LaGrange, Kentucky. More specifically, I will describe Companies' need to comply with the Clean Air Act as amended ("CAAA"), the Cross-State Air Pollution Rule ("CSAPR"), the proposed national emission standards for hazardous air pollutants ("HAPs Rule"), and the revised National Ambient Air Quality Standard ("NAAQS") for sulfur dioxide. Finally, I will discuss environmental permitting and present the Companies' Site Assessment Report.

Q. Please describe environmental regulation as it exists today.

A. Environmental compliance is and always has been an ongoing, everyday activity at our facilities and for our operations. The passage of the Clean Air Act, the Clean Water Act, and the Resource Conservation and Recovery Act, and all subsequent amendments to and revisions of these and other environmental laws and regulations have significantly increased the Companies' environmental compliance obligations over time. There is a need for continuous investment in, and maintenance of, environmental pollution control equipment and facilities. The statutory goal for improvement of air quality has given rise to the stringent environmental regulations issued by the U.S. Environmental Protection Agency ("EPA").

Q. What environmental laws and regulations are applicable to the control of air emissions from coal-fired generating stations?

A. Under the CAAA, the Companies are regulated by federal and state agencies. Equivalent regulatory authority at the state level is found in KRS Chapters 224 and 77. The EPA has granted Kentucky the functional responsibility for implementing the provisions of the CAAA through the State Implementation Plan process. All of the Companies' coal-fired units in Kentucky except for those in Jefferson County fall under the jurisdiction of the Kentucky Division for Air Quality ("KYDAQ") and must comply with regulations promulgated by the state agency, most notably in the form of the Title V permits KYDAQ issues to utility generating stations. Generating units located in Jefferson County are also subject to regulation by the Louisville Metro Air Pollution Control District ("LMAPCD"), which is the primary air permitting authority for those facilities.

Q. What are the environmental regulations that required an examination of the Companies' generation fleet to determine whether facilities should be fit with additional pollution control devices or retired?

A. There are three EPA air quality regulations that caused the need to make that examination: CSAPR , the proposed HAPs Rule, and the revised NAAQS for sulfur dioxide. Under the authority of the CAAA, the EPA has issued these three rules, two of which are final and the other soon-to-be-final. CSAPR (formerly known as the Clean Air Transport Rule) is the successor to the Clean Air Interstate Rule ("CAIR"). It imposes tighter restrictions on sulfur dioxide ("SO_2") and nitrogen oxides ("NO_X") to reduce 2.5-micron particulate matter ("$PM_{2.5}$") emissions. Likewise, the proposed

HAPs Rule is the successor to the Clean Air Mercury Rule ("CAMR"), and it imposes significant new and tightened emissions restrictions for mercury, particulate matter (a surrogate for hazardous non-mercury metals), and hydrogen chloride ("HCl," a surrogate for hazardous acid gases). Finally, the new 1- hour SO_2 NAAQS adopts a more stringent ambient standard for SO_2 and is the result of EPA's periodic review to determine the sufficiency of their national ambient air standards.

The Cross-State Air Pollution Rule

Q. Please describe the CSAPR and how it came to be issued by EPA.

A. Section 110 of the CAAA permits EPA to issue rules to prevent a state (or states) from "contribut[ing] significantly to nonattainment in, or interfer[ing] with maintenance by, any other State with respect to any … national primary or secondary ambient air quality standard[.]"[1] On March 15, 2005, EPA exercised that authority by issuing the Clean Air Interstate Rule, which required (and still requires) significant reductions in SO_2 and NO_X emissions in an attempt to bring a number of states and regions into compliance with the ("NAAQS") for $PM_{2.5}$ and eight-hour ozone (smog). (SO_2 is a precursor of $PM_{2.5}$, and NO_X is a precursor of $PM_{2.5}$ and ozone.) However, in a subsequent legal challenge on July 11, 2008, the U.S. Court of Appeals for the D.C. Circuit vacated CAIR and remanded it to EPA for re-promulgation in a form consistent with the court's opinion.[2]

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[1] *See* 42 U.S.C. 7410(a)(2)(D)(i)(I) ("[Each SIP shall] contain adequate provisions … prohibiting, consistent with the provisions of this subchapter, any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will … contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard[.]").

[2] *North Carolina v. EPA*, 531 F. 3d 896 (D.C. Cir. 2008).

EPA issued a proposed rule replacing CAIR on July 6, 2010, with a final rule issued on July 6, 2011.[3] Known as the Clean Air Transport Rule or CATR when initially proposed, the final rule is known as CSAPR. The new rule is designed to achieve SO_2 and NO_X emissions reductions beyond those originally required by CAIR through additional emissions reductions from power plants beginning in 2012, with still more reductions in 2014 and following years. CSAPR creates more stringent state-specific allowance budgets (or "caps") for SO_2 and NO_X, and would allow for only limited interstate allowance trading to ensure that individual states actually have to make the reductions EPA desires (though unlimited intrastate trading would be permitted). This allowance regime, which is separate and different from the existing allowance programs under the CAAA, will drive up the cost of allowances and necessitate reducing the Companies' SO_2 and NO_X emissions over time.

<u>The National Emission Standards for Hazardous Air Pollutants</u>

Q. Please describe the HAPs Rule and how it came to be issued by EPA.

A. In 1990, Congress amended Section 112 of the Clean Air Act to require EPA to conduct a study of HAPs from electric generating units and issue rules regulating such emissions if the Administrator determined that such regulation was "appropriate and necessary" after considering the results of the study."[4]

The EPA completed the required study in 1998[5] and announced on December 20, 2000, that it was "appropriate and necessary" to regulate HAPs emissions,

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[3] 76 Fed. Reg. 48208 (August 8, 2011).

[4] CAAA § 112(n)(1)(A) (emphasis added).

[5] EPA, Office of Air Quality Planning and Standards, Study of Hazardous Air Pollutant Emissions from Electric Utility Steam Generation Units – Final Report to Congress 7-1, 45 (1998).

particularly mercury, from coal- and oil-fired electric generating units.[6] After considering whether to issue facility-specific Maximum Achievable Control Technology ("MACT") standards or a cap and trade program achieving an equivalent result, the EPA issued the final Clean Air Mercury Rule ("CAMR") on May 18, 2005. CAMR created a cap-and-trade, allowance-based system to reduce electric generating unit mercury emissions that was to be implemented in two phases.

In 2008, the U.S. Court of Appeals for the D.C. Circuit vacated CAMR,[7] holding that EPA had not made the appropriate findings to de-list electric generating units from Section 112 (the CAAA section that requires MACT standards), so EPA could not regulate existing electric generating units under a Section111-based cap and trade scheme. The court vacated the entire regulation and remanded the matter to EPA either to de-list electric generating units from Section 112 after making the appropriate factual findings or to issue appropriate MACT standards for electric generating units under Section 112.

EPA chose the latter course, and on March 16, 2011, issued the HAPs Rule which proposes to regulate not only mercury, but also certain other HAPs emitted by electric generating units. For existing coal-fired units designed for coal with an energy content of at least 8,300 Btu/lb (which includes all of the Companies' coal-fired units), the proposed HAPs Rule's mercury emission limit was 1.0 lbs/TBtu or 8 lbs./TWh. However in May 2011, EPA revised the proposed existing source mercury

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[6] *Regulatory Finding on the Emissions of Hazardous Air Pollutants from Electric Utility Steam Generating Units*, 65 Fed. Reg. 79,825, 79,827 (Dec. 20, 2000).
[7] *See New Jersey v. EPA*, 517 F.3d 574 (D.C. Cir. 2008).

MACT limit to 1.2 lbs/TBtu (13 lbs/TWh).[8] This limit is over 35% more restrictive than CAMR's requirement and equals the Title V permit requirement for our new Trimble County Unit 2, which is an extremely low emitter. The HAPs Rule is particularly problematic for many older and smaller coal-fired electric generating units because it is a facility-specific requirement. Unlike the cap and trade approach under CAMR which allowed companies to avoid installation of controls on such units through over control of larger units or purchase of allowances, the HAPs rule requires compliance measures for each and every regulated facility.

Q. What emissions in addition to mercury does the HAPs Rule address?

A. The HAPs Rule regulates emissions of particulate matter (as a surrogate for hazardous non-mercury metals), and hydrogen chloride (HCl). The HAPs Rule's emission limit for total particulate matter from existing electric generating units is 0.030 lb/MMBtu. For HCl, the HAPs Rule's emission limit from existing electric generating units is 0.0020 lb per MMBtu; however, the HAPs Rule allows SO_2 to be measured as a surrogate for directly measuring HCl, and this is the measure the Companies will use. The SO_2 limit as a surrogate for HCl under the HAPs Rule is 0.20 lb per MMBtu.

Q. Why are the Companies concerned with an environmental regulation that is not yet final?

A. Although the HAPs Rule is not yet final, EPA must issue the final rule by November 16, 2011 pursuant to a consent decree between the EPA and various states and environmental groups. A number of parties have requested that EPA seek court

[8] On May 18, 2011, EPA issued a letter acknowledging that the proposed existing coal-fired unit mercury emission limit was incorrect due to computational errors, and that a value of 1.2 lbs./TWh is correct. It still represents a "90 percent reduction from the mercury in the coal used by power plants."

approval to delay the rule, but EPA's Administrator and other high level EPA officials have publicly stated that they intend to issue the final rule by the deadline.

Moreover, the history of EPA's (and KYDAQ's) regulation of electric generating unit emissions under the CAAA has been one of unrelenting tightening of restrictions, not loosening. While extensive comments have been submitted to EPA on the proposed rule, EPA continues to strongly defend the analysis which is the underlying basis of the standards in the proposed rule. There have been no developments which suggest that the final HAPs Rule will contain HAP emission limits significantly different from those in the proposed rule, particularly with respect to existing facilities.

The Companies simply cannot prudently wait for the rule to become final before it acts to comply. The CAAA requires compliance with regulations issued under Section 112(d), such as the HAPs Rule, within three years of issuance of a final rule.[9] EPA or states that have been given primacy to implement such regulations may extend that compliance deadline by one year if necessary for installation of controls.[10] The Companies believe they have a compelling case for a one-year extension and they will pursue such an extension from the environmental regulatory agencies as appropriate. But barring presidential intervention,[11] which has never occurred in the past, a maximum of four years (or three years if the one-year extension is not granted) is all the time utilities will have to comply with the HAPs Rule. Given that the entire coal-fired industry must comply with the HAPs Rule, four years is a very short time to implement the necessary steps, including construction of Cane Run NGCC,

[9] 42 U.S.C. § 7412(i)(3)(A).
[10] 42 U.S.C. § 7412(i)(3)(B).
[11] 42 U.S.C. § 7412(i)(4).

required to ensure regulatory compliance. For that reason, the Companies must act now.

Finally, the EPA was clear in the HAPs Rule's Notice of Proposed Rulemaking that it expects utilities and other affected entities to begin acting before the rule becomes final to ensure timely compliance:

> EPA expects that sources will begin promptly, ***based upon this proposed rule***, to evaluate, select, and plan to implement, source-specific compliance options. ... Starting assessments early and considering the full range of options is prudent because it will help ensure that the requirements of this proposed rule are met as economically as possible and that power companies are able to provide reliable electric power.[12]

It is prudent for the Companies to come to the Commission now to seek approval of their efforts to comply with the coming regulations in the lowest cost manner possible. For existing Cane Run, Tyrone and Green River, the most cost-effective environmental compliance strategy is retirement in conjunction with construction of Cane Run NGCC and the Bluegrass Generation asset purchase.

Q. Please describe the revised SO_2 NAAQS and how it came to be issued by EPA.

A. The CAAA requires EPA to periodically review their national ambient air quality standards for the six primary pollutants to ensure that they are sufficiently stringent to protect human health and the environment. In the course of this process, EPA staff and a panel of technical experts review current studies and other available data and determine whether the stringency of existing standards should be increased. On June 22, 2010, EPA issued a revised primary NAAQS for SO_2 (75 Fed. Reg. 35520). As

[12] *National Emission Standards for Hazardous Air Pollutants From Coal and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units*, 76 Fed. Reg. 24,976, 25,056 (May 3, 2011).

part of the rulemaking, EPA revoked the then existing primary SO_2 standards and replaced them with a more stringent one-hour standard of 75 parts per billion. Under the applicable regulatory procedures, state and local agencies are required to examine available data to classify areas as "attainment" or "non-attainment" of the new standard. If the locality is determined to be "nonattainment," the state or local agency must prepare a plan that provides for emission reductions from appropriate sources of emissions.

On June 2, 2011, by letter from Energy and Environment Cabinet Secretary Peters to Region 4 EPA, Kentucky proposed to designate Jefferson County as a nonattainment area for the revised SO_2 NAAQS. LG&E's Mill Creek and Cane Run generating stations are by far the most significant sources of SO_2 in Jefferson County. The available data indicate that significant SO_2 reductions will be required at the Mill Creek and Cane Run stations in order for Jefferson County to come into attainment with the new standard. The Companies' review also indicates that significant SO_2 reductions could likely be required at the Green River and Tyrone stations to ensure compliance with the new SO_2 NAAQS. While the Companies have proposed replacing or upgrading flue gas desulfurization controls at the Mill Creek Station to comply with the new SO_2 NAAQS, retrofitted or new emission controls are not cost-effective for the smaller and older coal-fired generating units a Cane Run, Green River and Tyrone (see David Sinclair's testimony). The Companies' review has not identified any measures that will be required at any of the Companies' other generating stations to comply with the revised SO_2 NAAQS.

Q. What are the environmental benefits of using natural gas combined and simple cycle facilities?

A. In general, the amount of pollutants emitted into the air, water and land from a natural gas combined cycle or simple cycle electric generating will be significantly less than the emissions emitted by the existing Cane Run, Green River, and Tyrone stations. With respect to air emissions, the amount of sulfur dioxide (SO_2) emitted per MW using natural gas is a small fraction of the existing Cane Run, Green River, and Tyrone emission rates. In addition, the emission rate for particulate matter, nitrogen oxides (NO_X) and air toxics is also significantly less for natural gas turbines than for the existing Cane Run, Green River, and Tyrone facilities. These reduced air emissions will translate into improved air quality adjacent to the plant and within the region in which the existing facilities are located and all NAAQS standards will be met. The reduced SO_2 and NO_X emissions are also a key component of our CSAPR compliance strategy.

The proposed new NGCC at Cane Run will have a cooling tower which will significantly reduce the impact of the station's existing cooling water intake and discharge. Likewise, there will no longer be a need for the Cane Run bottom ash basin and scrubber effluent discharges. Finally, a natural gas-fired generating unit would not generate any wastes requiring an on-site landfill for disposal.

Q. Are there environmental permits that will be required before construction commences on Cane Run NGCC?

A. Yes. Prior to commencing construction, the Cane Run NGCC unit must receive an air construction permit from the LMAPCD. In addition to this construction permit, the Cane Run NGCC unit must also receive a Certificate of Public Convenience and Necessity and a Site Compatibility Certificate from the Kentucky Public Service Commission and submit an acceptable cumulative environmental assessment to the Kentucky Energy and Environment Cabinet.

Q. Are there other environmental permits that will be required before Cane Run NGCC becomes operational?

A. Yes, there are several environmental permits which must be revised or updated prior to the commercial operation of a Cane Run NGCC. See Exhibit GHR-1.

Q. What is the expected timeline for obtaining the necessary environmental permits for Cane Run NGCC to become operational?

A. An air permit application to construct the Cane Run NGCC was submitted to the LMAPCD on June 13, 2011. The expected date for the issuance of this construction permit is spring 2012.

Q. Will the Companies have to obtain any environmental permits in connection with their purchase and operation of the Bluegrass Generation facilities in LaGrange, Kentucky?

A. The Bluegrass Generation facility is currently in operation and has all of the necessary environmental permits required to operate. However, with the purchase of these assets, the owner and operator information must be updated so that the permits can be transferred to the Companies.

Q. Are the Companies requesting that the Commission issue a Site Compatibility Certificate for Cane Run NGCC?

A. Yes. KRS Chapter 278 requires that any utility proposing to construct an electric generating facility file a Site Assessment Report with the Commission. In compliance with KRS 278.216 and KRS 278.708, a Site Assessment Report is attached as Exhibit GHR-2. The Site Assessment Report demonstrates that the Companies' plans for Cane Run NGCC satisfy the requirements for the Site Compatibility Certificate. Specifically, the construction will not cause a negative impact to local property values, unduly increase traffic or noise, nor change the visual impacts of the facility from what already exists.

Q. Does this conclude your testimony?

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

Gary H. Revlett

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 14th day of September 2011.

Tammy J. Elzy (SEAL)
Notary Public

My Commission Expires:

November 9, 2014

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