Schedule WPD-7

Trimble County Data

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 A SITE COMPATIBILITY CERTIFICATE, FOR THE EXPANSION OF THE TRIMBLE COUNTY GENERATING STATION	)))))))	CASE NO: 2004-_____

DIRECT TESTIMONY OF
JOHN N. VOYLES
VICE PRESIDENT, REGULATED GENERATION
LG&E ENERGY SERVICES INC.

Filed: December 9, 2004

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

A. My name is John N. Voyles. I am Vice President of Regulated Generation for LG&E Energy Services Inc. on behalf of Louisville Gas & Electric Company ("LG&E") and Kentucky Utilities Company ("KU") (collectively "the Companies"). My business address is 220 West Main Street, Louisville, Kentucky 40202. My background and work experience are described in Appendix A.

Q. Have you previously testified before this Commission?

A. Yes. I have testified before the Commission in the Environmental Compliance Plan filing for LG&E in Case No. 94-332.

Q. Are you sponsoring any exhibits?

A. Yes. I will be sponsoring the following appendix and exhibits:

Exhibit JNV-1, Aerial Photo of Existing Trimble County Site

Exhibit JNV-2, Elevation views of typical sub-critical and super-critical boilers

Exhibit JNV-3, Reliability, Capital and O&M Cost - TC2 vs. IGCC and CFB

Exhibit JNV-4, SO_2 and NO_x Netting-Out Summary

Exhibit JNV-5, Summary Schedule of TC2 Project Execution

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to describe the location, technologies chosen, fuels, environmental controls, and construction plans of the Companies' proposed new generating unit from an engineering perspective.

Q. Please describe the facility the Companies propose to construct in this proceeding?

A. The Companies have proposed the construction of a new pulverized-coal ("PC") super-critical unit of 750 MW nominal net rating (732 MW net summer rating) ("TC2") located

adjacent to the existing operating unit ("TC1") at the Trimble County Generating Station ("Trimble Station"). TC2 will employ state of the art air pollution control equipment to ensure environmental compliance. In fact, TC2 will have the lowest emissions per megawatt-hour produced of any coal-fired plant in Kentucky. It is anticipated that this air pollution control equipment will consist of a Selective Catalytic Reduction ("SCR") system, Baghouse, Wet Flue Gas Desulphurization ("WFGD") system, and Wet-Electrostatic Precipitator ("WESP"), with provisions for the addition of future controls for acid mist and mercury engineered into the design should air regulations change in the future.

Q. Why was the Trimble Station chosen as the location for TC2?

A. The Trimble Station was originally developed as a multi-unit site and much of the full plant infrastructure was installed at the time of construction of TC1. Specifically, the limestone barge unloader, limestone handling system, limestone grinding and slurry systems, coal barge unloader, coal handling system, site fire protection, site fuel oil storage, administrative offices, maintenance shops, warehousing facilities, site development, barge mooring cells and raw river water supply systems were placed into operation when TC1 was constructed. See Exhibit JNV-1. These systems were built to handle the operation of multiple units with little or no modifications. The Companies can take advantage of these existing systems and infrastructure that would otherwise need to be developed and constructed. This significantly reduces the construction costs over having to acquire the land and develop a generating station in its entirety at a "greenfield" site. In addition, significant staffing benefits will be realized by building at the Trimble County site by taking advantage of economies of scale. Staffing at TC1 alone consist of

approximately 80 full-time employees. The addition of TC2, while more than doubling the coal-fired generation of the station, will only require an 50% increase in full-time employees by adding approximately 30-40 employees to the staff. Finally, there is more than sufficient real estate available for construction and permanent facilities at the Trimble Station, and the site is well suited for the required transmission upgrades as the site was originally designed and constructed for multiple units. The Companies also enjoy a good relationship with the local community and have experienced no significant problems during the recent construction efforts of the SCR and combustion turbine projects. This excellent relationship and recent proven success of constructing large capital projects at the site should continue and we expect positive feedback on the project from the community.

Q. How does TC2 complement the existing generating assets of the Companies?

A. The last coal-fired generating unit installed by the Companies was TC1 in 1990. Since then, the native load demand for electricity has grown as discussed in Mr. Sinclair's testimony. In addition to native load growth since 1990, the Companies have been operating and maintaining the existing fleet of generating units. However, the Companies base load, coal-fired fleet now has an average age of 34 years of service, with approximately 650 MW at 40 years or older. While it is not unusual to have utility generating assets operating for this time period, the viability of a typical coal-fired unit with over 40 years of service becomes an ever-increasing challenge and older assets are more prone to failures that can be too costly to justify repairing. While TC2 is not being constructed to allow the decommissioning of some of our older, smaller coal-fired units,

its availability will decrease the risk to customers should circumstances cause one of our older units to be decommissioned sooner than anticipated.

CHOICE OF TECHNOLOGY

Q. Why did the Companies choose the super-critical technology?

A. Super-critical PC units have a higher thermal efficiency compared to other thermal power cycles, such as sub-critical pulverized coal and Circulating Fluidized Bed ("CFB"), because super-critical boilers operate at higher pressures and temperatures. The higher thermal efficiency reduces the fuel cost by reducing the amount of coal burned for the electricity produced, providing a benefit for the customers. There is also a significant environmental benefit from this higher efficiency since less fuel is combusted to produce the same electrical energy, therefore, less pollutants are emitted for the same mega-watt of electricity produced.

Q. How did the Companies evaluate the available technologies?

A. As a part of our evaluation of technologies for TC2, we focused on several key objectives on which to base a selection. Some of the key objectives were the economic assessments related to: the cost of construction, on-going O&M cost for the plant and environmental control for various technologies. Also, given the significant savings of constructing at Trimble Station where many of the original assets for a multi-unit site were installed with TC1, our approach called for reviewing and maximizing the use of those assets as far as economically practicable. The design fuel selection was focused around utilization of Kentucky coals and other regional bituminous high sulfur coals; however, the plant had to be able to burn a wide range of fuels, including western sub-bituminous coal without significantly impacting the capital or O&M cost of the project. Also, the technology

chosen preferably would preserve space for additional future options at the site as originally envisioned (potentially for a TC3 and TC4).

In addition, the Companies (i) conducted a world-wide technology review that utilized the engineering expertise of our parent and sister companies to gain the most recent knowledge of new units, (ii) researched users of the latest vintage units of each technology, and (iii) researched the marketplace through the major equipment providers of similar size units. Based on this review, the Companies determined that the best technology choice for TC2 is super-critical pulverized coal. Advances in component materials and designs have increased the reliability of super-critical units substantially beyond the early vintage super-critical boilers employed in the U.S. during the 1970's and early 1980's. In fact, super-critical technology has been the technology of choice world-wide over the last couple of decades with the installed capacity increasing by approximately 76,000 MW from 1982 to 2000. Most of this super-critical technology was installed and refined in Europe and Asia due to demand for coal-fired generation in those regions of the world. A review of coal-fired generation of TC2's size currently being built in North America or being permitted in the U.S. indicates that super-critical technology is the choice in the industry due to increased efficiency, reduced emissions and maturation of design.

Q. Do the Companies or their parent company currently own any super-critical units?

A. While the Companies do not own any super-critical units, the vast majority of PC boilers owned by our parent company in Europe are of super-critical technology with a total capacity near 20,000 MW.

Q. How does the super-critical technology compare to the sub-critical technology?

A. The main difference in the technologies is the operating pressure and temperature of a super-critical boiler, which is above the critical pressure of water at approximately 3200 psi. The TC2 super-critical boiler will be designed to operate above 3,600 psi. A similar sub-critical boiler would operate at only 2,400 psi. From an engineers' perspective, this means that within the boiler the water turns to steam with no phase change thus no steam drum is required, whereas a sub-critical unit utilizes multiple pass steam/water circuits connected to a steam drum. Since there is no steam drum, start-up times are shorter and load ramp rates are faster which results in more flexible operations compared to the sub-critical unit. Exhibit JNV-2 shows the similarities between sub-critical and super-critical designs. It is important to note that the two designs are essentially the same for the entire station other than the absence of a steam drum in the super-critical boiler and the materials of construction are generally of higher quality tube metallurgy to accommodate the higher temperatures.

Q. How does the super-critical technology compare to CFB and Integrated Gasification Combined Cycle ("IGCC") technologies?

A. The CFB technology has not matured beyond the 300 MW size at this time, and therefore a multi-CFB unit installation would be required to provide 750 MW of capacity. This would result in a higher capital cost and revenue requirement when compared to a super-critical unit. Also, a multi-CFB unit installation would require more installation area from the site and would likely need to be built in the area currently designated for TC3 and TC4. And, while the CFB technology does offer fuel flexibility, there are disadvantages such as lower thermal efficiency, longer startup times, and increased O&M costs. Further, with the more stringent SO_2 emission limits of today, CFB does not have

the cost advantage it once had over PC boilers (the ability to reduce SO_2 emissions to required levels by injection of limestone in the furnace without the use of a flue gas desulphurization process downstream of the steam generator). Best Available Control Technology ("BACT") for sulfur-dioxide emissions would likely require the installation of a WFGD, thus eliminating a significant cost advantage once held by CFB over PC technology.

While the IGCC technology holds promise for sometime in the future, to date it has not demonstrated reliability comparable to that of super-critical technology which is desired for utility applications in the 750 MW capacity size. In fact, of the four coal-fueled IGCC facilities operating around the world today for electricity production (only two of which are in the U.S.), none of the operators report availabilities above seventy-nine (79) percent, far less than the ninety-five (95) percent target for TC2. A summary of the availabilities reported by the operators of IGCC during the October 2003 Gasification Technologies Conference can be found in Exhibit JNV-3.

The air permitting studies for TC2 that were performed by Black & Veatch analyzed the super-critical pulverized coal design against CFB and two different IGCC designs. The report indicated that a comparable 750 MW size IGCC generating unit installed at the Trimble Station would require over $400 million more in capital investment and would have substantially higher O&M costs than the super-critical boiler while being substantially less reliable and much more complex to operate. The comparison for cost and reliability can be found in Exhibit JNV-3. Further, as described in Ms. Dodson's testimony, the environmental aspects of IGCC are nearly equivalent to the TC2 design for a substantially less expensive and more reliable design.

In summary, the complexity and relative technological immaturity of the IGCC process in a utility application increases the opportunities for deficiencies in design, vendor supplied equipment, construction, operation, and maintenance. The Companies feel the risk is too high for cost overruns and low availability, and that being on the cutting edge of this technology would be an unnecessary risk for their customers. However, while the time is not right for IGCC as the technological choice for TC2, the Companies are committed to staying abreast of IGCC developments for consideration in meeting potential future generating needs of the Companies.

Q. What is the significant environmental benefit of the super-critical technology?

A. The higher thermal efficiency (less coal burned per MW of production) of a super-critical boiler directly impacts the environmental emission rates from the unit. With this efficiency benefit and the air pollution controls to be installed, when the unit goes into service in 2010, the total emissions from TC1 and TC2 will be less than TC1's 2000-2001 baseline for two major pollutants (NO_x and SO_2). The TC2 air permit is based on this "netting out" of NO_x and SO_2 at the Trimble Station. This means that even though the station generating capacity will be more than doubled, the combined emissions for each pollutant will not significantly increase. TC2 will employ the most modern air pollution control equipment available. With respect to NO_x and SO_2 combined, TC2 will be the cleanest coal-fired unit per MWh produced in Kentucky. Calculations summarizing this netting out are provided in Exhibit JNV-4.

OPERATION AND MAINTENANCE

Q. What fuels will TC2 use?

TC2 will use the same Number 2 fuel oil for startup as is presently used for TC1. The primary fuel will be high sulfur coal; however, a new coal blending system will be added to the existing coal handling system during the construction of TC2 that will provide the capability for burning blends of coal, including high sulfur Kentucky, lower sulfur eastern and western sub-bituminous (Powder River Basin) coals. This blending capability gives the Companies maximum flexibility in coal choice, thus enabling the Companies to better manage fuel costs.

Q. Will the similarities between TC1 and TC2 result in operating efficiencies?

A. Yes. Given the similarities between TC1 and TC2 as shown in Exhibit JNV-2 comparing a sub-critical boiler to a super-critical boiler, the Companies expect to spend considerably less dollars on operation and maintenance of TC2 than if the same unit were built in a greenfield application. By utilizing the existing systems identified earlier in my testimony (i.e., limestone systems, coal systems, river water intake, site fire protection, etc.) the incremental O&M associated with operating and maintaining these systems is small in comparison to the total cost spent currently for TC1 only. With regards to personnel, TC1 currently employs approximately 80 people. The increase in staffing for the addition of TC2 is expected to be approximately 30-40 positions. A comparison of incremental personnel and O&M costs for TC2 with the current cost of TC1 shows the cost advantages of constructing for our native load needs at the existing Trimble County site.

CONSTRUCTION

Q. Please describe the construction plans for TC2.

A. Construction of TC2 will be primarily performed through a single Engineering, Procurement and Construction ("EPC") contract that will primarily include the boiler, air pollution control equipment, and turbine generator systems. The contracting process of utilizing a single EPC contract is very common in today's marketplace for owners that want to manage schedule, performance and price risk. The EPC contract will have significant penalties associated with these areas of risk to protect the Companies and the customers. Some relatively minor portions of the project may be constructed by the Companies, independent of the EPC contractor. The Companies will employ an Owner's Engineer to assist the Companies in certain functions of the project, such as preparing the EPC bid package, assisting in the management of communication during the bid clarification period, support during the contract award process, support for conceptual and detailed engineering reviews, and support for site construction management.

Q. Please describe the bidding phase for TC2.

A. The bidding process for the major EPC contract will use a functional technical specification with a typical set of turn-key, lump sum fixed price terms and conditions for a project of this scale. The specification and contract will include a full performance wrap (i.e., equipment warranties, schedule guarantees, emission rate guarantees, etc.) to ensure the contractor delivers the project on time, within budget and within the required performance criteria. Proposals will be solicited from a set of pre-qualified entities, including EPC contractors, major equipment providers, and engineering firms. The Companies have already completed the pre-qualification process and plan to issue the bid documents the week of January 24, 2005. The bidders have three months to provide their initial bids, followed by a proposal review period of approximately three months, at

which time the detailed negotiations for the project will begin. Detailed negotiations on scope, schedule, price and other commercial terms will then proceed through the remainder of 2005. The schedule targets providing the selected bidder with a limited notice to proceed in the December 2005 to January 2006 timeframe. A summary schedule of the project is shown in Exhibit JNV-5.

Q. Please describe the prequalification process for TC2.

A. The Companies hired Cummins and Barnard, an Engineering firm from Michigan with recent U.S. experience on similar projects, to assist us with development of a detailed process. The main components of the process were a description of the project both technically and commercially along with a detailed formal questionnaire issued to prospective vendors and Original Equipment Manufacturers ("OEM"). The questionnaire required detailed information regarding engineering, administrative, project management, construction, and safety experience for similar projects. It also inquired as to the entities' financial capabilities by requiring submittal of standard financial data. The questionnaire required responses to other commercial areas such as the willingness to accept schedule and performance Liquidated Damages, and the ability for partners in the project to be held jointly and severally liable. The potential vendors were allowed to present their qualifications, both commercially and technically, regarding how each would manage the project to a team comprised of engineers, managers and senior management from within the Companies that are involved with the development of the project. The respondents were ranked using structured scoring criteria by both the internal team and the Cummins and Barnard participants.

Q. Are there permits that will be required as part of the construction on TC2?

A. Yes. The environmental permits are discussed in the testimony of Ms. Dodson. In addition, permits routinely required for construction (i.e., plumbing, building, etc.) will be obtained at the appropriate time as necessary.

Q. Please describe the construction timeline for TC2.

A. Once the successful EPC bidder is selected, the Companies expect the actual construction to take approximately four years. The expected timeline for construction of TC2 is as follows: EPC bidding and contract award process to be completed by the end of 2005; construction to begin in the first quarter 2006 and be mechanically completed in the fourth quarter of 2009; commissioning, startup, and testing phase following mechanical completion through the first quarter of 2010; and commercial operation in the second quarter of 2010. This summarized schedule is shown in Exhibit JNV-5.

Q. Will there be any new jobs created by the TC2 project?

A. Yes. As mentioned earlier, we expect to add between 30 to 40 permanent positions at the Trimble Station specific to TC2. We estimate that about 650 construction employees will be required on average for each of the four years of construction with a peak of nearly 1,200 construction workers or about 2,700 man-years.

Q. Why are the Companies filing for a CCN prior to signing an EPC contract?

A. The Companies recognize that it may take a number of months for approval of the CCN filing and the necessary pre-construction environmental permits and also know from experience that the large scope of the project will require an extensive bidding, evaluation, and negotiation period. In order to receive proposals with better price certainty and avoid a large contingency for an uncertain start date, the Companies believe it is prudent to synchronize these three efforts so that the best price is received for a

schedule that supports the desired commercial operating date within the construction commencement restrictions of the air permit. Any EPC contract entered into will be contingent upon the grant of a CCN and Site Compatibility Certificate from this Commission.

Q. Have the Companies performed any construction work for TC2?

A. No. The Companies have only conducted typical development activities, such as preliminary geotechnical investigations and noise surveys, but have not performed any permanent work related to TC2.

COSTS OF FACILITY

Q. What are the expected costs of TC2?

A. The expected capital cost for construction of TC2 is $1.1 billion. The project cost was originally derived with the assistance of Burns & McDonnell Engineering in 2002. The cost was then independently reviewed and updated by Cummins & Barnard in January 2004 to account for subsequent scope and market changes. This includes escalation, contingency, and owner's costs, but excludes costs for transmission facilities. As explained in the testimony of Mr. Blake, 25% of the costs will be borne by other project participants, and therefore the Companies' construction costs are expected to be about $800 million, excluding transmission facilities. The projected annual O&M expenses associated with the Companies' 75% ownership for TC2 in 2004 dollars for non-fuel, fixed and variable O&M is $11.3 million.

Q. Based on the review and analysis to date, what conclusions have the Companies reached?

A. The Companies have concluded that the installation of TC2 at the Trimble Station provides the best choice option available. The selection of a 750 MW nominal net super-critical unit will provide the Companies' customers with a proven technology, adding the most reliable, lowest cost generating asset to the existing fleet of generating assets to meet the growing load requirements. The unit design provides the least cost supply alternative inclusive of state-of-the-art environmental controls, while preserving fuel flexibility to manage the cost of coal for today's needs and beyond.

Q. Does this conclude your testimony?

A. Yes, it does.

VERIFICATION

STATE OF KENTUCKY)
) SS:
COUNTY OF JEFFERSON)

The undersigned, **John N. Voyles**, being duly sworn, deposes and says that he is the Vice President of Regulated Generation LG&E Energy Services Inc., 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.

JOHN N. VOYLES

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 2nd day of December, 2004.

Notary Public

(SEAL)

My Commission Expires:

_____

VICTORIA B. HARPER
NOTARY PUBLIC
STATE AT LARGE
KENTUCKY
My Commission Expires Sept. 20, 2006

Appendix A

John N. Voyles, Jr.

Vice President - Regulated Generation
LG&E Energy LLC
220 West Main Street
P.O. Box 32010
Louisville, Kentucky 40202
(502) 627-4762

Education

Rose-Hulman Institute of Technology, B.S. in Mechanical Engineering - 1976
Emory Business School, Management Development Program - 1992
University of Louisville
The Effective Executive - 1993
Center for Creative Leadership-1996
Leadership Louisville 2004-2005

Previous Positions

LG&E Energy LLC, Louisville, Kentucky
2003 (Feb to May) – Director, Generation Services

Louisville Gas and Electric Company, Louisville, Kentucky:
1998-2002 – General Manager, Cane Run, Ohio Falls & 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

Other Professional Associations

Research Advisory Committee, Electric Power Research Institute (EPRI)
Board of Directors, Electric Energy Inc.
Board of Directors, Ohio Valley Electric Corp. (OVEC)

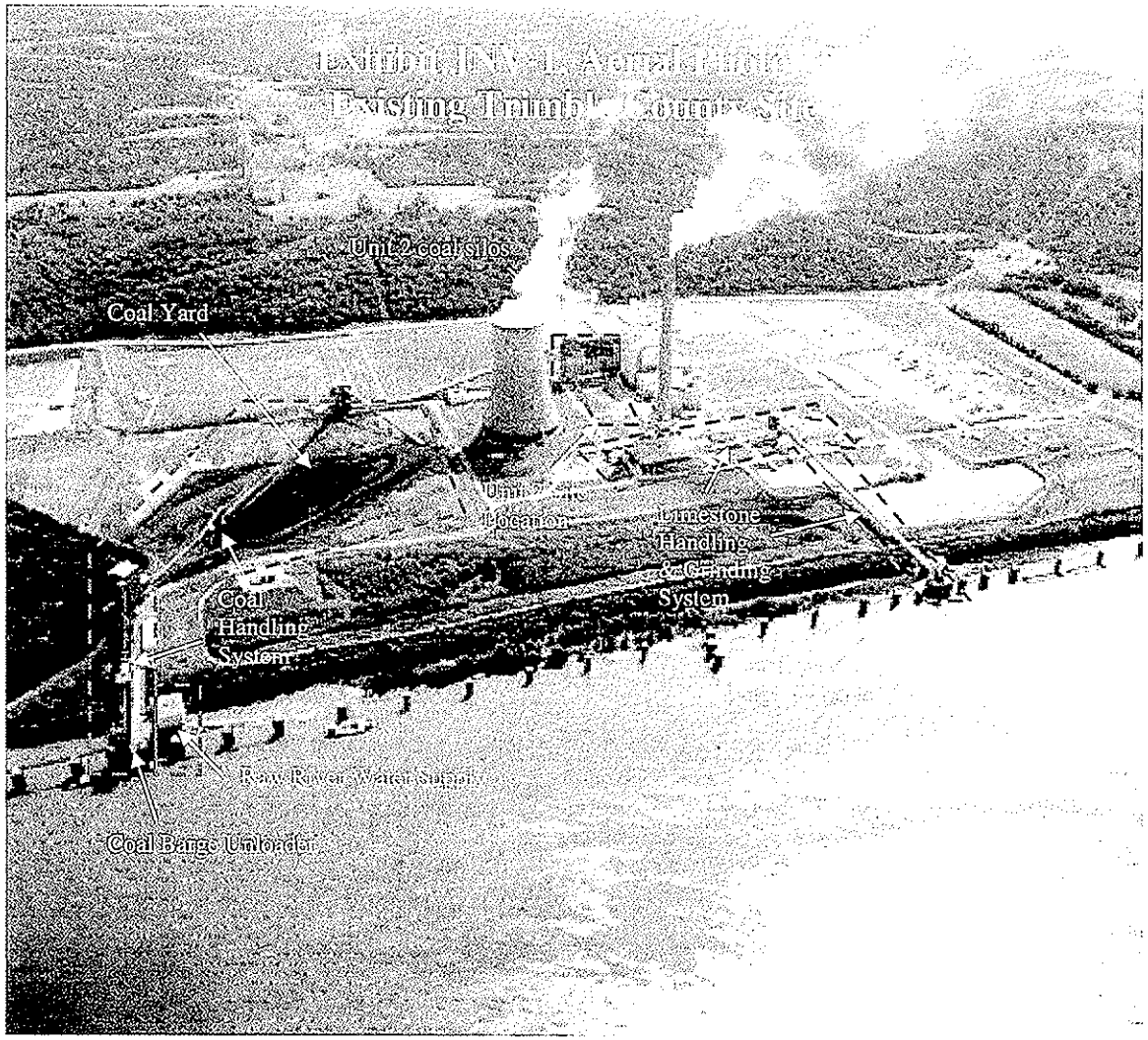
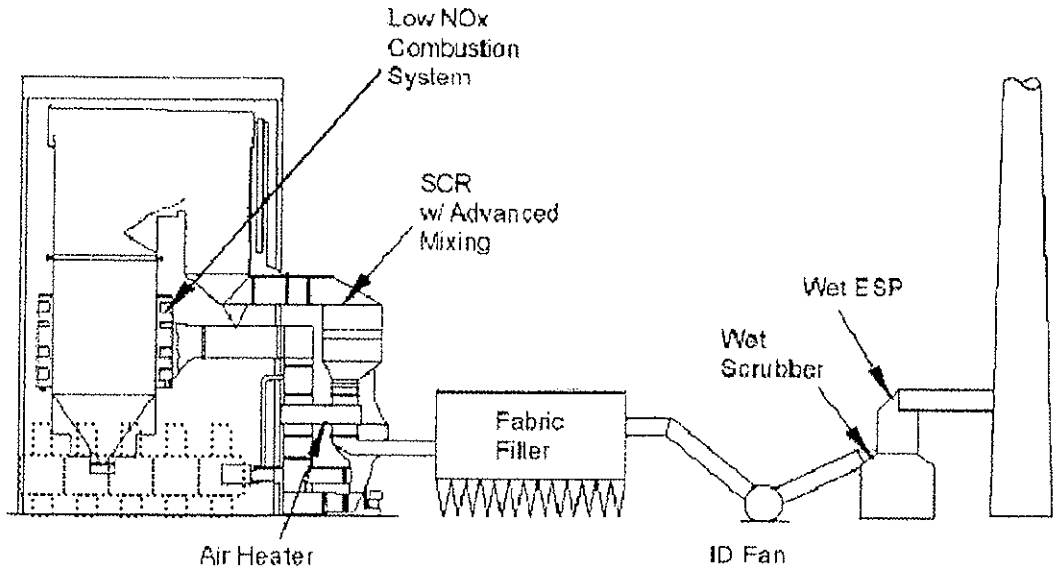
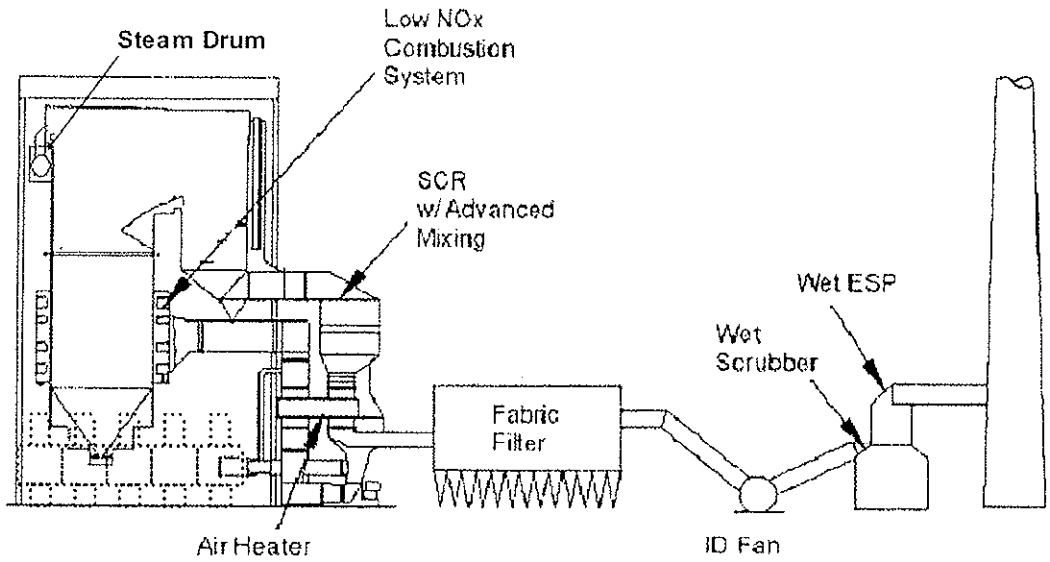

Unit 2 coal silo
Coal Yard
Unit 1 Location
Limestone Handling & Grinding System
Coal Handling System
Raw River Water Supply
Coal Barge Unloader

Exhibit JNV-2 - Elevation views of typical sub-critical and super-critical boilers

Super-critical Boiler Arrangement



Sub-critical Boiler Arrangement



COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

FILED
DEC 17 2004
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 A SITE COMPATIBILITY CERTIFICATE, FOR THE EXPANSION OF THE TRIMBLE COUNTY GENERATING STATION	)	CASE NO: 2004-00507

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.* and 807 KAR 5:001, Sections 8 and 9, hereby jointly apply to the Kentucky Public Service Commission ("Commission") for a Certificate of Public Convenience and Necessity, and a Site Compatibility Certificate, for the Companies' participation in the expansion of the Trimble County Generating Station ("Trimble Station") through the construction of a 750 MW nominal net (732 MW summer rating) super-critical pulverized coal-fired base load generating unit ("TC2"). 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 *In the Matter of: Joint Application of E.ON AG, PowerGen plc, LG&E Energy Corp., Louisville Gas and Electric Company and Kentucky Utilities Company for Approval of an Acquisition*, Case No. 2001-104, and are incorporated herein by reference pursuant to 807 KAR 5:001, Section 8(3).

3. Statement of Necessity. LG&E and KU have prepared a 2004 Joint Load Forecast which projects that the Companies will need baseload capacity beginning in 2010. As shown in the table below, the Companies will need between 401 MW and 552 MW of additional capacity by 2012 in order to serve their native loads and maintain the present reserve margin range of 13% to 15%.

Scenario		2004	2005	2006	2007	2008	2009	2010	2011	2012
13 % RM	MW Need Before DSM	-827	-647	-486	-313	-103	100	224	419	535
	MW Need After DSM	-877	-722	-588	-437	-237	-35	90	285	401
15 % RM	MW Need Before DSM	-696	-513	-350	-174	40	245	372	570	688
	MW Need After DSM	-747	-590	-453	-300	-97	109	235	434	552

The 2004 Joint Load Forecast is attached as an exhibit to the direct testimony of David S. Sinclair, which accompanies this Joint Application and is incorporated herein by reference. The Companies have also conducted a Resource Assessment to compare the options available to meet the projected needs of their respective customers. That Assessment determined that the construction of TC2 at the Trimble Station, as proposed herein, was the least-cost option to meet those needs. That construction is essential for LG&E and KU to continue to meet their obligation, as regulated utilities, to provide reliable, low-cost power to their growing native

loads. The Resource Assessment is attached as an exhibit to the direct testimony of John P. Malloy, which accompanies this Joint Application and is incorporated herein by reference.

4. Permits From Public Authorities. The Companies will be required to obtain certain environmental and construction-related permits associated with the construction of TC2. The required permits, and the process for obtaining those permits, is discussed in the direct testimonies of Sharon L. Dodson and John N. Voyles, 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.

5. Location of Proposed Construction. As previously set forth, TC2 will be located at the Trimble Station in Trimble County, Kentucky. Three maps showing the location of the proposed construction are attached hereto at the tab labeled 'Maps'. There are no like facilities owned by others in the area shown on the map, except for the existing unit at the Trimble Station, and it is not anticipated that TC2 will compete with any other public utilities, corporations or persons.

6. Manner of Proposed Construction. As explained in detail in the direct testimony of Mr. Voyles, TC2 will be constructed primarily through an Engineering, Procurement and Construction ("EPC") contract, awarded through a bid process, which will include engineering, procurement and construction of the boiler, air pollution control equipment and turbine generator. The Companies may perform construction of some minor portions of the project independent of the EPC contractor. The Companies will also employ an Owner's Engineer to assist as needed. TC2 will employ state of the art environmental technology and, with respect to NO_x and SO_2 combined, TC2 will be the cleanest coal-fired unit per MWh produced in Kentucky.

7. Sources of Funds. As explained in detail in the direct testimony of Kent W. Blake, which accompanies this Joint Application and is incorporated herein by reference, the Companies expect to finance their share of the costs of construction of TC2 with a combination of funds generated from cash flow and the issuance of new debt and equity securities. The Companies will continue to evaluate financing alternatives during construction, and will seek the Commission's prior approval of the issuance of any securities as may be required by KRS 278.300.

8. Costs. The expected capital cost for construction of the Companies' collective share of TC2 is approximately $800 million, excluding costs for any transmission facilities needed to serve native load. The projected annual O&M costs for the Companies' collective share of TC2 is $11.3 million non-fuel fixed and variable O&M in 2004 dollars.

9. Ownership. Subject to the necessary approvals, the Companies will collectively own 75% of TC2. KU will own 81% and LG&E will own 19% of the Companies' collective share of TC2, based on their energy and capacity needs, pursuant to the Power Supply System Agreement ("PSSA") dated October 9, 1997. The remaining 25% share of TC2 will be owned by the Illinois Municipal Electric Agency ("IMEA") and the Indiana Municipal Power Agency ("IMPA"). The ownership of TC2 is described in more detail in the direct testimonies of Mr. Blake and Mr. Malloy.

10. Site Compatibility Certificate. Consistent with KRS 278.216 and 278.708, a Site Assessment Report is attached as an exhibit to the direct testimony of Ms. Dodson. As set forth in that Report and the testimony of Ms. Dodson, the proposed construction is fully compatible with the selected site and the surrounding area because it will be located at the Trimble Station, which was constructed to support additional units such as TC2.

11. Testimony and Exhibits. A detailed statement of the facts establishing that TC2 is required by the public convenience and necessity, and otherwise supporting this Joint Application, is included in the direct testimony and exhibits of the Company's witnesses:

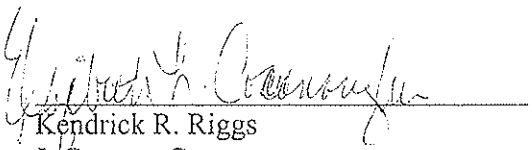
- Paul W. Thompson -- Senior Vice President, Energy Services
- David S. Sinclair -- Director, Market Analysis and Valuation
- John P. Malloy -- Director, Generation Services
- John N. Voyles -- Vice President, Regulated Generation
- Sharon L. Dodson -- Director, Environmental Affairs
- Kent W. Blake -- Director, State Regulation and Rates

The testimony of those witnesses, together with their exhibits, accompany this Joint Application and are incorporated herein by reference.

WHEREFORE, Louisville Gas and Electric Company and Kentucky Utilities Company hereby request the Commission to issue an Order granting the Companies a Certificate of Public Convenience and Necessity and a Site Compatibility Certificate for their 75% participation in the expansion of the Trimble Station through the construction of a 750 MW nominal net (732 MW summer rating) super-critical pulverized coal-fired base load generating unit which participation is to be divided 19% and 81% between Louisville Gas and Electric Company and Kentucky Utilities Company, respectively.

Dated: December 17, 2004

Respectfully submitted,



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Counsel for Louisville Gas and
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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of the foregoing Application was served on the following persons on the 17th day of December, 2004, U.S. mail, postage prepaid:

Elizabeth E. Blackford
Assistant Attorney General
Office of the Attorney General
Office of Rate Intervention
1024 Capital Center Drive, Suite 200
Frankfort, Kentucky 40601-8204

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

Counsel for Louisville Gas and Electric
Company and Kentucky Utilities Companies

INTRA-AGENCY MEMORANDUM

KENTUCKY PUBLIC SERVICE COMMISSION

TO: Case File No. 2004-00507

FROM: A. W. Turner, Jr.

DATE: April 4, 2006

RE: Informal Conference of March 24, 2006

At the request of Louisville Gas and Electric Company and Kentucky Utilities Company (LG&E/KU), an informal conference in this case was set for March 24, 2006, in the Commission's offices in Frankfort, Kentucky. Present were the persons listed on the attached attendance list.

LG&E/KU requested this informal conference to update the Commission and the parties on the progress of the Trimble County 2 generating plant, including upcoming activities and expenditures. LG&E/KU distributed a handout, a copy of which is attached.

cc w/o handout: Parties of Record

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 A SITE COMPATIBILITY CERTIFICATE, FOR THE EXPANSION OF THE TRIMBLE COUNTY GENERATING STATION	)	CASE NO. 2004-00507

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March 24, 2006 Informal Conference

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Please sign in:

NAME	REPRESENTING
A W Turner, Jr	PSC - Legal
Kent Blake	LG:E/KU
Mike Kurtz	KIUC
Don Meade	Trades Council
Bob Amato	PSC
ELIE RUSSELL	PSC
Betsy Bennett	Graddy & Asso./Sierra Club
JEFF SHAW	PSC - FIN. ANALYSIS
Isaac Scott	PSC - Financial Analysis
Jim Welch	PSC - Engineering
JOHN SHUPP	PSC - ENGINEERING
SCOTT PULLIAM	GLBCTC
Joseph B Wise III	GLBCTC
TONY HERBERT	GLBCTC

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 A SITE COMPATIBILITY CERTIFICATE, FOR THE EXPANSION OF THE TRIMBLE COUNTY GENERATING STATION	)	CASE NO. 2004-00507

==========

March 24, 2006 Informal Conference

==========

Please sign in:

NAME	**REPRESENTING**
STEVE KINGSOLVER	PSC.
BETH COCANOUGHER	LG&E / KU
DOUG SCHETZEL	LG&E / KU

Louisville Gas and Electric Company

and

Kentucky Utilities Company

Informal Conference for

Trimble County 2 Case Nos. 2004-00507

March 24, 2006

Trimble County 2 ("TC2") Project Summary

• Capacity	750 MW (nominal)		
• Technology	Super critical pulverized coal		
• Ownership	LG&E	14.25%	107 MW
	KU	60.75%	455 MW
	IMPA	12.88%	97 MW
	IMEA	12.12%	91 MW
• Construction Cost	$1.1 Billion (Excludes Transmission)		
• Constructor	Bechtel Power Corp. (BPC)		

TC2 Key Dates

• CPCN Order No. 2004-00507	November 1, 2005
• Air Permit Issued by DAQ	November 17, 2005
• Third Party Challenge to Air Permit	December 16, 2005
• Design Development Agreement	December 22, 2005
• EPPC Procedural Conference on Air Permit	February 8, 2006
• Limited Notice to Proceed (LNTP)	April 3, 2006
• Notice to Proceed (NTP)	July 3, 2006
• EPPC Hearing on Air Permit Begins	September 12, 2006
• Mechanical Completion	Third Quarter 2009
• Commercial Operation	Second Quarter 2010

TC2 Key Activities and Expenditures

- *Design Development Phase* — *Less than $1 million per month*
  - *— Bid and Evaluate Key Equipment*
    - *Steam Turbine*
    - *Steam Generator*
    - *Air Quality Control System*
- *Limited Notice to Proceed Phase* — *$10 to $20 million per month*
  - *— Award Key Equipment P.O.'s*
    - *Release for Engineering*
    - *Long Lead Procurement*
    - *Limited Cancellation Charges*
  - *— Detailed Design of Balance of Plant*
    - *Long Lead Procurement*
- *Notice to Proceed* — *Average over $300 million per year for 3 years*
  - *— Site Mobilization and Construction*

TC2 Construction Status

- BPC selected to provide Engineering Procurement and Construction Services
- BPC working under Design Development Agreement
- EPC Agreement Negotiated
  - Will be conformed to Key Equipment Selection before execution
  - Consistent with Cost and Performance Estimates in CPCN Filing
  - Fixed Price Lump Sum Turn Key with Liquidated Damages
    - Performance
    - Schedule
- Failure to meet LNTP and NTP dates will significantly increase cost
  - Post Katrina Inflation
    - Commodities (copper, steel)
  - World-wide Demand for Power Equipment
  - Observed Plant Cost Inflation
    - 7% to 9% per year
  - Schedule impacts greater than day for day

The Utilities' Capacity and Energy Needs Have Increased

- *2010 capacity need to maintain 13% to 15% RM with 2004 Load Forecast (EPCN Application) 90 to 235 MW*
- *2005 Actual Demand and Energy Sales are consistent with 2004 Forecast*
- *The loss of EEI Capacity on 12/31/05 increased need by 200 MW*

TC2 Air Permit Litigation

- Third Parties have challenged DAQ's issuance of the TC2 Air Permit:

- EPPC Hearing to begin September 12, 2006
  - — ALJ Decision possible in 2006
  - — Resolution of all appeals could take several years

- Prudent Decision is to proceed with construction
  - — Small chance of significant change to TC2 Construction Plans
  - — Large and certain impact to customers from construction delay
    - Increased construction costs
    - Greater than day for day delay
    - Exposure to purchased power costs

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF KENTUCKY UTILITIES COMPANY FOR AN ADJUSTMENT OF BASE RATES	)))	CASE NO. 2009-00548

In the Matter of:

APPLICATION OF LOUISVILLE GAS AND ELECTRIC COMPANY FOR AN ADJUSTMENT OF ITS ELECTRIC AND GAS BASE RATES	))))	CASE NO. 2009-00549

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

Filed: January 29, 2010

Q. In general, what is Energy Services' major corporate objective?

A. Energy Services has four major, and overlapping, objectives: (i) to maximize the performance and investment life of the Companies' electric generation and transmission assets; (ii) to maintain sound operating and maintenance practices that promote reliable operations, high efficiency, and a safe working environment; (iii) to continue to provide high value electric service to LG&E and KU customers; and (iv) to operate as a good steward of the environment.

Generation Systems

Q. Please describe LG&E's generation system.

A. LG&E owns and operates approximately 3,200 MW of generating capacity with a net book value of approximately $1.1 billion. LG&E's generation system consists primarily of three coal-fired generating stations – Cane Run and Mill Creek, both located in Jefferson County, and Trimble County. All of these stations are equipped with flue gas desulfurization systems or "scrubbers" to reduce sulfur dioxide, allowing the units to burn lower-cost, higher-sulfur content coal. LG&E also owns and operates multiple natural gas-fired combustion turbines, which supplement the system during peak periods, and the Ohio Falls hydroelectric station, which provides baseload supply, subject to river flow constraints.

Q. Please describe KU's generation system.

A. KU owns and operates approximately 4,500 MW of generating capacity with a net book value of approximately $1.6 billion. KU's generation system consists primarily of four generating stations – Ghent in Carroll County, Tyrone in Woodford County, E.W. Brown in Mercer County and Green River in Muhlenberg County. The

installation of scrubbers on all KU coal-fired units has continued, except for the much smaller Green River 3 and 4 and Tyrone 3 units. The scrubbers installed on all of the Ghent units are in operation with only minor punchlist-type items remaining. The scrubber to service the E.W. Brown units will be in operation by November 2010. KU also owns and operates multiple natural gas fired-combustion turbines, which supplement the system during peak periods, and a hydroelectric generating station at Dix Dam, located next to the Dix System Control Center.

Q. Are LG&E's and KU's generation systems operated jointly?

A. Yes. LG&E and KU, as owners and operators of interconnected electric generation, and transmission facilities, achieve economic benefits through joint operation as a single interconnected and centrally dispatched system and have operated jointly since the acquisition of KU Energy Corporation by LG&E Energy in 1998. In addition, the Companies implemented joint integrated resource planning and acquisition as a result of the merger. A map of LG&E's and KU's generating units is attached as Thompson Exhibit 1.

The joint dispatch of the generation units continues to produce energy efficiencies through joint dispatch capabilities and intercompany sales of power. These efficiencies have enabled the Companies to provide a higher value of electric service to our customers.

Trimble County Unit No. 2.

Q. Please describe the investments in and construction of generation facilities which support the need for an adjustment of base rates at this time.

A. On November 1, 2005, in Case No. 2004-00507, LG&E and KU were granted a certificate of public convenience and necessity ("CPCN") to construct Trimble County Unit No. 2 ("TC2"). The Companies are currently in the latter phase of constructing TC2, a super-critical, pulverized coal-fired generating unit utilizing state-of-the-art technology to accomplish the dual goals of extraordinary efficiency and low environmental impact. It is currently scheduled for commercial operation in June 2010, and once in commercial operation, TC2 will have a net generation capacity of 760 MW, of which the Companies will own 75%, or approximately 570 MW. LG&E will be entitled to 19% or approximately 108 MW, and KU will be entitled to 81% or approximately 462 MW. A recent aerial photograph showing the construction of TC2 is attached as Thompson Exhibit 2. Also, aerial photographs of the Trimble County Generation Station are attached as Thompson Exhibit 3.

The construction of TC2 is the most significant ongoing generation investment. The total projected cost to the Companies in constructing TC2 is approximately $965 million, with $871 million required for the generation unit. Through October 2009, the Companies have invested $815 million in TC2 generation, with $322 million having been expended since the last base rate application. As a result of significant economic changes in the construction industry during the building of TC2, such as increased labor costs, the total projected cost of TC2 has increased by approximately 9% from original estimates in 2004.

Despite the increase, the construction of TC2 has been very cost efficient, which will allow our customers to enjoy its benefits on schedule. The cost of the unit per kW, when compared to its generation capacity, is projected to be $1,528 per kW, well below the current market estimate of $2,400-$3,000 per kW. When the $125 million tax credit which LG&E and KU received for TC2 is taken into account, the estimated cost is $1,308 per kW. This makes TC2 a leader in terms of dollars per kW among other plants currently under construction in the United States, which ensures that TC2 will provide customers with reliable service at a great value.

Q. Please describe how TC2 will achieve extraordinary efficiency while minimizing its environmental impact.

A. In designing TC2, the Companies were aware of the ever-increasing need to protect and preserve the environment. TC2 utilizes the latest technology, such as state-of-the-art air pollution control equipment, to maximize its electrical output while reducing its environmental impact. TC2 incorporates more environmental control technologies than any other coal fired unit in Kentucky. TC2 releases significantly fewer regulated emissions than Trimble County Unit No. 1, which became operable in 1991, while generating over 40% more electricity with approximately 20% better heat rate efficiency. As a result of TC2's efficiency and environmental advances, the Companies were awarded a $125 million tax credit under the Qualifying Advanced Coal Project Credit.

Q. What is the projected commercial in-service date for TC2?

A. The contract commercial in-service date for TC2 is June 2010. Bechtel, the entity constructing the TC2 generating unit, has significant financial incentive to complete

TC2 in June 2010 due to the substantial liquidated damages provision in its contract. Construction is on a tight schedule and many milestones have been achieved, as all major equipment has been delivered, the new cooling tower has been placed into operation, the water treatment upgrades are completed, the coal blending facility has been commissioned and the new auxiliary boiler has been installed and placed into operation. Commissioning operations and check out began in November, which are operations that lead up to the final phase of full load generation testing. First fire on fuel oil is expected to begin in February 2010, with the first fire on coal expected in April, 2010. Full load performance testing is expected to occur during May and June 2010 prior to the commercial in-service date.

Q. Have there been reductions in available generation supply since TC2's CPCN was granted?

A. Yes. Since TC2's CPCN was granted, the Companies' generating supply has decreased by over 3,200 GWh annually. First, the available supply has decreased as KU no longer purchases energy from Electric Energy, Inc. ("EE Inc"). In 2006, KU's power supply agreement with EE Inc expired under its own terms and the majority owners of EE Inc, over KU's objection, elected to pursue market-based pricing authority. Under a long-standing agreement, KU had been purchasing 200 MW of relatively low-cost base load energy, the equivalent of approximately 1,450 GWh of energy each year.

Secondly, Owensboro Municipal Utility ("OMU") has terminated its purchase power contract with KU effective May, 2010. KU had purchased OMU's excess energy (approximately 200 MWat OMU's peak), and, at the time of the TC2 CPCN

approval, planned to purchase approximately 1,775 GWh of energy annually from OMU. The OMU contract was a long-standing resource for low cost energy and OMU's termination of the contract, over KU's objection, will result in a loss to KU's baseload power supply.

Q. Has the recession affected the Companies' load since TC2's CPCN was granted?

A. Yes. The Companies have continuously prepared load forecasts during the construction of TC2 and monitored their actual loads. The most recent load forecast is attached as Thompson Exhibit 4. The Companies' electricity sales forecast is lower as a result of the economic recession. Driven primarily by reductions in energy usage by industrial customers, the Companies' 2011 energy requirements (2011 is the first full year of TC2 operation) are forecasted to be approximately 4,000 GWh less than the 2011 level forecasted at the time of the TC2 CPCN.

Q. Does the public convenience and necessity require TC2 today, given this revised view of native load energy requirements and generating supply?

A. Absolutely. Combining the reduction in native load energy requirements with the loss of base load energy from OMU and EE Inc, the Companies' 2011 energy supply with TC2 exceeds the forecast in the TC2 CPCN by only 800 GWh, or 2% of the Companies' 2011 energy requirements. TC2 is expected to provide the Companies with over 4,000 GWh of energy in 2011 effectively replacing the energy lost from OMU and EE Inc while also displacing higher-cost energy in the company's supply to native load customers. Customers will benefit from all of the low cost energy produced by TC2, as it is expected to be the lowest cost unit in the system and therefore the first unit in the merit order of economic dispatch. In the first full year of

operation the Companies' project fuel and purchase power offsets from TC2 to be in excess of $67 million growing to over $80 million in 2012. Indeed, customers will begin to benefit from TC2 this spring, prior to its commercial operation, when the coal cost associated with the test power from this unit is reflected in the calculation of the fuel adjustment clause. Without TC2, the Companies cannot ensure an adequate energy supply at a reasonable cost to provide customers with reliable electric service.

Q. What is the impact on the Companies' reserve margin when TC2 begins commercial operation in 2010?

A. The addition of a base load unit to a generation system typically increases the reserve margin for a limited period of time due to the size of the base load capacity and the critical need to maintain an adequate reserve margin during the construction of the new base load unit. This impact was reflected in the CPCN proceeding and is expected to occur this summer when TC2 is placed into commercial operation. Although there have been changes in both load and generation resources since the CPCN was granted in 2005, the impact of the addition of TC2 on the Companies' reserve margin remains very similar to the impact presented at the proceeding for the CPCN. The most recent projection is that the reserve margin will be 22.6% when TC2 begins commercial operation in 2010, instead of the 19.3% forecast in the TC2 CPCN.

In addition, due to the reduction in the annual peak hour load due to the Companies' DSM programs, the resulting load shape is now flatter than projected in the CPCN case, thereby increasing the need for a generation resource that supports base load requirements. TC2 is an excellent base load generation resource for this

purpose. TC2 is a generation asset primarily targeted at meeting the demand of base load by providing low cost energy around the clock, not only the demands at *the* peak hour.

The addition of a base load unit typically increases the reserve margin for a period of time. This is so because adding base load generation necessarily involves adding larger blocks of generating capacity than, for example, a combustion turbine. More importantly, due to the need to maintain an adequate reserve margin at all times, especially during the construction of the base load unit, the addition of a base load unit inevitably adds to the reserve margin. To avoid this increase would require the utility to maintain an unreasonable reserve margin during the construction of the base load unit or rely heavily on short-term purchase power.

Efficiency Initiatives

Q. Please describe what is meant by the phrase "asset management."

A. As used by Energy Services, the term "asset management" refers to a business discipline for maximizing the performance of long-term generation and transmission assets through management of the assets' life cycles. The dual goals of asset management are to increase the efficiency of the assets while continuing to provide reliable service. Asset management allows for realization of these goals in the most cost-effective manner possible.

Q. Can you provide examples of the Companies' asset management initiatives for their generation systems?

A. Yes. LG&E and KU continue to modernize and expand the use of digital control technology (Distributed Control Systems or DCS) in its generation facilities, as new

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Mark David Goss
Chairman

Teresa J. Hill
Vice Chairman

Gregory Coker
Commissioner

April 4, 2006

PARTIES OF RECORD

Re: Case No. 2004-00507
Louisville Gas and Electric Company and Kentucky Utilities Company

Attached is a copy of the memorandum which is being filed in the record of the above-referenced case. If you would like to make comments regarding the contents of the informal conference memorandum, please do so within five days of receipt of this letter. If you have any questions, please contact A. W. Turner, Jr. at (502)564-3940, Extension 256.

Sincerely,

Beth O'Donnell
Executive Director