



RECEIVED

JUN 26 2009

Mr. Jeff DeRouen
Executive Director
Kentucky Public Service Commission
211 Sower Boulevard
Frankfort, Kentucky 40602-0615

PUBLIC SERVICE
COMMISSION

Kentucky Utilities Company
State Regulation and Rates
220 West Main Street
PO Box 32010
Louisville, Kentucky 40232
www.eon-us.com

Robert M. Conroy
Director - Rates
T 502-627-3324
F 502-627-3213
robert.conroy@eon-us.com

June 26, 2009

RE: In the Matter of: The Application of Kentucky Utilities Company for
Certificates of Public Convenience and Necessity and Approval of Its 2009
Compliance Plan for Recovery by Environmental Surcharge
Case No. 2009-00197

Dear Mr. DeRouen:

Enclosed please find an original and ten (10) copies of Kentucky Utilities Company's ("KU") Application and Testimonies in the above-referenced docket.

The filing includes:

- KU's Application,
- Lonnie E. Bellar's Testimony,
- John N. Voyles's Testimony and Exhibits,
- Charles R. Schram's Testimony and Exhibits,
- Shannon L Charnas's Testimony, and
- Robert M. Conroy's Testimony and Exhibits.

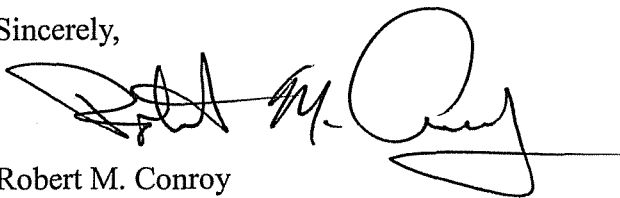
The original and each copy of KU's application and testimony contains a CD holding an electronic copy of Exhibit JNV-3 through Exhibit JNV-12 and Exhibit JNV-14 for the testimony of Mr. Voyles along with paper copies of the remaining exhibits to the testimony. These exhibits are being provided electronically due to the volume of the material.

Mr. Jeff DeRouen
June 26, 2009

Also enclosed are an original and ten (10) copies of KU's Petition for Confidential Protection regarding certain information contained in the filing. Electronic files of the confidential information contained in Exhibits JNV-8, JNV-9, JNV-10, and JNV-11 to Mr. Voyles's testimony are being provided on CD. Confidential versions of Mr. Schram's testimony and exhibits with the confidential information highlighted are being provided in paper copy. The CD and paper copies are being filed with the Petition in a sealed envelope marked confidential. (For the sake of clarity, the CDs containing the redacted versions of the affected exhibits are labeled, "REDACTED," whereas the CDs containing the confidential information are labeled, "CONFIDENTIAL.")

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

Sincerely,

A handwritten signature in black ink, appearing to read "R. Conroy", with a long horizontal line extending to the right from the end of the signature.

Robert M. Conroy

cc: Hon. Dennis G. Howard
Hon. Michael L. Kurtz
Hon. Kendrick R. Riggs
Hon. Allyson K. Sturgeon



COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

RECEIVED

JUN 26 2009

PUBLIC SERVICE
COMMISSION

In the Matter of:

**THE APPLICATION OF KENTUCKY UTILITIES)
COMPANY FOR CERTIFICATES OF PUBLIC)
CONVENIENCE AND NECESSITY AND)
APPROVAL OF ITS 2009 COMPLIANCE PLAN)
FOR RECOVERY BY ENVIRONMENTAL)
SURCHARGE)**

CASE NO. 2009-00197

APPLICATION

Kentucky Utilities Company (“KU”), pursuant to KRS 278.020(1), KRS 278.183, and 807 KAR 5:001, Sections 8 and 9, hereby petitions the Kentucky Public Service Commission (“Commission”) by application to issue an order granting KU Certificates of Public Convenience and Necessity (“CPCN”) for the construction of Selective Catalytic Reduction (“SCR”) Nitrogen Oxides (“NO_x”) emission control technology at E.W. Brown Unit 3 and for the construction of new landfills at the Ghent and Trimble County Generating Stations, and approving an amended compliance plan for purposes of recovering the costs of new pollution control facilities through its Environmental Surcharge tariff (“2009 Environmental Compliance Plan”). These compliance costs are incurred in meeting the NO_x and sulfur dioxide (“SO₂”) emissions limits mandated by the Environmental Protection Agency (“EPA”) and the Clean Air Act as amended, the Clean Water Act, the Resource Conservation and Recovery Act, and other federal, state, or local environmental requirements that apply to coal combustion byproducts (“CCP”) from our facilities used for the production of electricity from coal. In support of this Application, KU states as follows:

1. Address: The Applicant’s full name and business address is: Kentucky Utilities Company, One Quality Street, Lexington, Kentucky 40507. KU’s mailing address is Kentucky

Utilities Company c/o Louisville Gas and Electric Company, Post Office Box 32010, 220 West Main Street, Louisville, Kentucky 40232.

2. Articles of Incorporation: A certified copy of KU's current Articles of Incorporation are on file with the Commission in Case No. 2005-00471, *In the Matter of: Application of Louisville Gas and Electric Company and Kentucky Utilities Company for Authority to Transfer Functional Control of their Transmission System*, filed on November 18, 2005, and is incorporated by reference herein pursuant to 807 KAR 5:001, Section 8(3).

3. KU is a public utility, as defined in KRS 278.010(3)(a), engaged in the electric business. KU generates and purchases electricity, and distributes and sells electricity at retail in the following counties in Central, Northern, Southeastern and Western Kentucky:

| | | | |
|------------|-----------|------------|------------|
| Adair | Edmonson | Jessamine | Ohio |
| Anderson | Estill | Knox | Oldham |
| Ballard | Fayette | Larue | Owen |
| Barren | Fleming | Laurel | Pendleton |
| Bath | Franklin | Lee | Pulaski |
| Bell | Fulton | Lincoln | Robertson |
| Bourbon | Gallatin | Livingston | Rockcastle |
| Boyle | Garrard | Lyon | Rowan |
| Bracken | Grant | Madison | Russell |
| Bullitt | Grayson | Marion | Scott |
| Caldwell | Green | Mason | Shelby |
| Campbell | Hardin | McCracken | Spencer |
| Carlisle | Harlan | McCreary | Taylor |
| Carroll | Harrison | McLean | Trimble |
| Casey | Hart | Mercer | Union |
| Christian | Henderson | Montgomery | Washington |
| Clark | Henry | Muhlenberg | Webster |
| Clay | Hickman | Nelson | Whitley |
| Crittenden | Hopkins | Nicholas | Woodford |
| Daviess | | | |

Request for Certificates of Public Convenience and Necessity
Brown Unit 3 SCR

4. Statement of Need (807 KAR 5:001 § 9(2)(a)): In support of KU's contention that the public convenience and necessity requires, or will require, the proposed construction of SCR NO_x emission control technology at Brown Unit 3, KU submits the following:

- a. As part of its capital project planning process, KU performed work on Brown Unit 3 during its scheduled outage in spring 1997 to improve the unit's reliability and performance. The work KU performed succeeded in reducing the potential for future unit outages and derates and in achieving improved turbine efficiency (approximately 40 additional MW) at comparable steam flows. KU viewed this work as routine maintenance.
- b. Under the federal Clean Air Act, the EPA's New Source Review ("NSR") program imposes more stringent environmental requirements on new or modified sources of emissions; however, routine maintenance, repair, and replacement activities performed on older, existing sources are exempt from NSR review. KU believed its 1997 work on Brown Unit 3 was routine maintenance exempt from NSR review under then-prevailing regulatory interpretations.
- c. During the late 1990s, however, after KU's work on Brown Unit 3 was complete, the EPA adopted new interpretations of key NSR regulatory provisions. These new interpretations resulted in controversy regarding the calculation of emissions increases and what constitutes "routine maintenance."

- d. In March 2006, the EPA issued a Notice of Violation to KU for undertaking the 1997 Brown Unit 3 turbine and reheater work without complying with NSR requirements. Later, in December 2006, the EPA issued a Notice of Violation against KU for exceeding heat input values in Brown Unit 3's permit. Finally, in March 2007, the EPA filed suit against KU in federal court seeking substantial civil penalties, remedial measures, and a permanent injunction barring operation of Brown Unit 3 without controls sought by government.
- e. Though KU believed it had valid legal defenses against the EPA's accusations, KU faced significant litigation risks and sought settlement with the EPA. KU reached a settlement with the EPA that included a requirement that KU build an SCR for Brown Unit 3 to be operational by December 31, 2012, in accordance with EPA's NSR policy requiring that such settlements incorporate controls and limits reflecting the Best Available Control Technology. A federal court approved the settlement in March 2009.
- f. SCR technology is a proven methodology for reducing NO_x emissions. In fact, the Commission has previously granted CPCN's for the same technology for the purpose of reducing NO_x emissions at Ghent Unit Nos. 1, 3 and 4, Brown Unit 3, Trimble County Unit 1 and Mill Creek Units 3 and 4. *In the Matter of: Application of Kentucky Utilities Company and Louisville Gas and Electric Company for a Certificate of Convenience and*

Necessity to Construct Selective Catalytic Reduction (SCR) NO_x Control Technologies, Case No. 2000-00112, Order Issued June 22, 2000.

- g. In accordance with its federal-court-approved settlement agreement with the EPA, KU is seeking approval of a CPCN to begin construction of an SCR at Brown Unit 3 in 2010.

5. Description of Proposed Construction (807 KAR 5:001 § 9(2)(c)): KU is requesting a CPCN for an SCR at Brown Unit 3. This project qualifies as “new” construction which requires prior approval from the Commission under KRS 278.020. The construction timeframe for the SCR is 18-24 months. Construction is expected to begin in 2010 and be completed in 2012. For this reason, KU is requesting that the Commission issue its CPCN by December 23, 2009.

There are no utilities, corporations, or persons with whom the proposed new construction is likely to compete.

6. Permits or Franchises (807 KAR 5:001 § 9(2)(b)): KU will need to obtain a permit modification from the Kentucky Division for Air Quality, which will be incorporated into the plant’s Title V Operating Permit. The current Title V permit is attached as Exhibit JNV-14. The application for the permit modification to construct and operate a SCR is scheduled to be submitted to the Division for Air Quality in July 2009. A copy of the SCR permit application will be provided to the Commission following its submission to the Division for Air Quality.

7. Area Maps (807 KAR 5:001 § 9(2)(d)): Three area maps showing the location where the SCR is proposed to be constructed are attached to this Application at the tab labeled ‘Maps’.

8. Financing Plans (807 KAR 5:001 § 9(2)(e)): The proposed construction of the SCR technology for which KU is seeking a CPCN will cost approximately \$183.85 million. KU's proposed financing of such costs is discussed in the prepared direct testimony of Mr. Bellar.

9. Estimated Cost of Operation (807 KAR 5:001 § 9(2)(f)): The estimated annual cost of operations of the proposed construction is shown on page 2 of Exhibit JNV-1 to Mr. Voyles's testimony, which is also attached to this Application.

10. Final action on this Application is requested by December 23, 2009 in order to allow KU to begin procurement of materials and equipment under the proposed construction schedule.

Ghent Landfill Project

11. Statement of Need (807 KAR 5:001 § 9(2)(a)): In support of KU's contention that the public convenience and necessity requires, or will require, the proposed construction of a new landfill at the Ghent Generating Station, KU states that a significant increase in gypsum production has occurred as all four Ghent units have been fitted with Flue Gas Desulfurization units ("FGDs"). KU further states that its existing ash treatment basin is nearing its maximum desired capacity and additional storage for CCP will be required. Building this new landfill is the most cost-effective means of disposing of the CCP produced at the Ghent station.

12. Description of Proposed Construction (807 KAR 5:001 § 9(2)(c)): KU is requesting a CPCN for a three-phase landfill at the Ghent Generating Station. This project qualifies as "new" construction which requires prior approval from the Commission under KRS 278.020, and will involve the purchase of 350 acres of land. The construction timeframe for Phase I of the landfill is 18-24 months. Phase I construction is expected to begin in 2010 and be

completed in 2013. For this reason, KU is requesting that the Commission issue its CPCN by December 23, 2009.

There are no utilities, corporations, or persons with whom the proposed new construction is likely to compete.

13. Permits or Franchises (807 KAR 5:001 § 9(2)(b)): KU will need to obtain the necessary Kentucky Division of Waste Management Landfill Permit for the Ghent landfill. KU has met with KYDWM staff on several occasions over the last 12 months to discuss permitting issues for the proposed landfill at Ghent and received favorable feedback on the preliminary designs. After final engineering design work is completed this fall, a landfill permit application will be submitted to Division of Waste Management.

14. Area Maps (807 KAR 5:001 § 9(2)(d)): Three area maps showing the location where the Ghent landfill is proposed to be constructed are attached to this Application at the tab labeled 'Maps'.

15. Financing Plans (807 KAR 5:001 § 9(2)(e)): The project cost forecast for Phase I is \$203.97 million and is scheduled to be in service by 2013. KU's proposed financing of such costs is discussed in the prepared direct testimony of Mr. Bellar.

16. Estimated Cost of Operation (807 KAR 5:001 § 9(2)(f)): The estimated annual cost of operations of the proposed construction is shown on page 2 of Exhibit JNV-1 to Mr. Voyles's testimony, which is also attached to this Application.

17. Final action on this Application is requested by December 23, 2009 in order to allow KU to begin procurement of materials and equipment under the proposed construction schedule.

Trimble County Landfill Project

18. Statement of Need (807 KAR 5:001 § 9(2)(a)): In support of KU's contention that the public convenience and necessity requires, or will require, the proposed construction of a new landfill at the Trimble County Generating Station, KU states that a significant increase in CCP production is expected when Trimble County Unit 2 goes into commercial operation in June 2010, in addition to the CCP produced by the continuing operation of Unit 1. Building this new landfill is the most cost-effective means of disposing of the Trimble County Units' CCP.

19. Description of Proposed Construction (807 KAR 5:001 § 9(2)(c)): KU is requesting a CPCN for a new four phase landfill at the Trimble County Generating Station. This project qualifies as "new" construction which requires prior approval from the Commission under KRS 278.020. The construction timeframe for Phase I of the landfill is 24-30 months. Construction is expected to begin in 2010 and be completed in 2012. For this reason, KU is requesting that the Commission issue its CPCN by December 23, 2009.

There are no utilities, corporations, or persons with whom the proposed new construction is likely to compete.

20. Permits or Franchises (807 KAR 5:001 § 9(2)(b)): Building the new landfill at Trimble County will require an application to the Division of Waste Management for a modification of the existing permit during which the plans will be updated to current engineering and environmental standards. Trimble County has received favorable feedback on the preliminary landfill designs during meetings with KYDWM staff and after final engineering design work is completed, a permit modification application will be submitted. A copy of the existing permit is attached to the testimony of John Voyles as Exhibit JNV-7.

21. Area Maps (807 KAR 5:001 § 9(2)(d)): Three area maps showing the location where the Trimble County landfill is proposed to be constructed are attached to this Application at the tab labeled 'Maps'.

22. Financing Plans (807 KAR 5:001 § 9(2)(e)): The total project cost forecast for Phase I is \$94.04 million, of which partners IMEA and IMPA are responsible for 25%. KU is responsible for 36% or \$33.86 million. The project is scheduled to be in service by 2012. The project will serve KU and Louisville Gas and Electric Company ("LG&E") (collectively, "the Companies") customers and will be owned proportionally. KU's proposed financing of such costs is discussed in the prepared direct testimony of Mr. Bellar.

23. Estimated Cost of Operation (807 KAR 5:001 § 9(2)(f)): The estimated annual cost of operations of the proposed construction is shown on page 2 of Exhibit JNV-1 to Mr. Voyles's testimony, which is also attached to this Application.

24. Final action on this Application is requested by December 23, 2009 in order to allow KU to begin procurement of materials and equipment under the proposed construction schedule.

**Request for Approval of KU's 2009 Environmental Compliance Plan for Recovery by
Environmental Surcharge**

25. This Application and supporting testimony and exhibits are available for public inspection at each KU office where bills are paid. The Company is giving notice to the public of the proposed change to its environmental surcharge tariff by newspaper publication and through a bill insert in monthly billings to its customers. An initial Certificate of Notice and Publication is filed with this Application. A Certification of Completed Notice and Publication will be filed with the Commission upon the completion of this notice.

26. Pursuant to KRS 278.183, KU is entitled to recover its costs of complying with environmental requirements that apply to coal combustion byproducts from facilities used to generate electricity from coal.

27. KU is adding four new projects, two projects that will result in modifications to existing ash treatment basins at the Brown and Trimble County Generating Stations, and a modification to the existing Trimble County Air Quality Control System project (Project 23), all of which will enable KU to comply with the requirements of the Clean Air Act and other environmental regulations. The environmental regulations creating the need for these new projects are shown in the 2009 Environmental Compliance Plan, which is attached to this Application and to the testimony of Mr. Voyles as Exhibit JNV-1. Mr. Voyles's testimony further presents KU's evidence concerning the applicable regulatory requirements and how the pollution control facilities satisfy those regulatory requirements. The 2009 Environmental Compliance Plan identifies the appropriate regulatory approvals or permits showing that such projects fulfill the obligations under the applicable environmental regulations. The pollution control projects included in the 2009 Environmental Compliance Plan are:

- a. Amendment to Project 23: Expands existing project to include operations and maintenance costs associated with the Air Quality Control System ("AQCS") equipment at Trimble County Unit 2;
- b. Project 28: Installation of SCR equipment on Brown Unit 3;
- c. Project 29: Raising the elevation of existing main and auxiliary ash treatment basins at E.W. Brown Generating Station;
- d. Project 30: Construction of new landfill at Ghent Generating Station;

- e. Project 31: Raising three walls to originally permitted heights on the ash treatment basin and adding a liner to the gypsum storage pond dike at Trimble County Generating Station;
- f. Project 32: Construction of new landfill at Trimble County Generating Station; and
- g. Project 33: Beneficial reuse operations and maintenance costs for all generating stations.

The total capital cost of these new projects to the Compliance Plan is estimated to be \$462.55 million.

28. A detailed summary of the facts and compliance requirements supporting this Application is set forth in the direct testimony and exhibits of the Company's witnesses:

- The testimony of Lonnie E. Bellar, Vice President of State Regulation and Rates, presents an overview of KU's environmental surcharge plan and supporting testimony, and requests the recovery of an overall rate of return that includes a 10.63% return on common equity. His testimony also states the reasons KU is seeking CPCNs for certain ECR projects, the reasons for requesting the projects themselves, how KU plans to finance the projects, and explains why KU's costs of beneficial reuse projects should be given ECR recovery.
- John N. Voyles, Vice President of Transmission and Generation Services, presents testimony that describes the projects and the need for the projects in KU's 2009 Plan. Mr. Voyles also presents testimony in support of KU's settlement of the NSR litigation with the EPA. Mr. Voyles also presents testimony concerning the environmental regulatory requirements faced by the

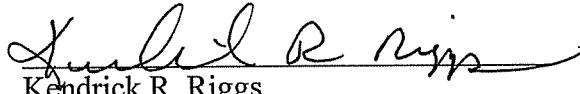
Companies, the NSR regulation, and the rules and regulations governing the handling and disposal of the solid waste material produced as a result of coal combustion.

- Charles R. Schram, Director, Energy Planning, Analysis and Forecasting, presents testimony on the cost-effectiveness of the projects in KU's 2009 Plan.
- Shannon L. Charnas, Director of Utility Accounting and Reporting, presents testimony affirming that none of the costs for which KU is seeking recovery through its Environmental Surcharge tariff are included in base rates and describes the accounting associated with the projects in KU's 2009 Plan, consistent with the Commission's prior orders.
- Robert M. Conroy, Director of Rates, presents KU's proposed Electric Rate Schedule ECR and corresponding monthly reporting requirements and presents testimony affirming that the calculation of KU's environmental surcharge will comply with all previous Commission Orders. Mr. Conroy also presents the revisions to the monthly ECR reporting forms that KU proposes, and explains why the revisions to the forms are appropriate.

WHEREFORE, Kentucky Utilities Company requests the Commission: (1) enter an order by December 23, 2009 granting KU Certificates of Public Convenience and Necessity to permit the construction of the Selective Catalytic Reduction Nitrogen Oxide emission control technology at Brown Unit 3 as herein described, and to permit the construction of new landfills at the Ghent and Trimble County Generating Stations; (2) approve the new projects to KU's Compliance Plan for purposes of recovering the costs of the projects through the environmental surcharge; (3) approve the revised Rate Schedule ECR to become effective for bills rendered on and after January 28, 2010 (i.e. beginning with the environmental surcharge expense month of December 2009); and (4) approve the proposed ES monthly filing forms; (5) approve the recovery of the overall rate of return requested herein; and (6) and such other relief as KU may be entitled under law.

Dated: June 26, 2009

Respectfully submitted,



Kendrick R. Riggs
W. Duncan Crosby III
Stoll Keenon Ogden PLLC
2000 PNC Plaza
500 West Jefferson Street
Louisville, Kentucky 40202
Telephone: (502) 333-6000

Allyson K. Sturgeon
Senior Corporate Attorney
E.ON U.S. LLC
220 West Main Street
Louisville, Kentucky 40202
Telephone: (502) 627-2088

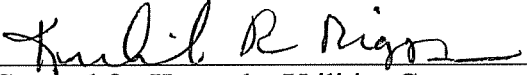
Counsel for Kentucky Utilities Company

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 26th day of June 2009, U.S. mail, postage prepaid:

Dennis G. Howard II
Lawrence W. Cook
Assistant Attorneys General
Office of the Attorney General
Office of Rate Intervention
1024 Capital Center Drive, Suite 200
Frankfort, KY 40601-8204

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



Counsel for Kentucky Utilities Company

Compliance Plan

KENTUCKY UTILITIES COMPANY
2009 ENVIRONMENTAL COMPLIANCE PLAN (Case No. 2009-00197)

| Project | Air Pollutant or Waste/By-Product To Be Controlled | Control Facility | Generating Station | Environmental Regulation | Environmental Permit | Actual or Scheduled Completion | Actual (A) or Estimated (E) Projected Capital Cost (\$Million) |
|---------|--|---|--|---|--|--------------------------------|--|
| 28 | NOx | Selective Catalytic Reduction | Brown Unit 3 | Clean Air Act (1990) Brown Unit 3 EPA Consent Decree | Kentucky Division of Air Quality Title V Air Permit Modification | 2012 | \$183.85 (E) |
| 29 | Fly & Bottom Ash, Gypsum | CCP Storage Ash Treatment Basin (Phase II) | Brown Station | 401 KAR Chapter 5 KRS Chapter 151 | Division of Water - KPDES Permit and Dam Construction Permit | 2012 | \$24.86 (E) |
| 30 | Fly & Bottom Ash, Gypsum | CCP Storage Landfill (Phase I) | Ghent Station | 401 KAR Chapter 45 | Division of Waste Management - Landfill Permit | 2013 | \$203.97 (E) |
| 31 | Fly & Bottom Ash, Gypsum | CCP Storage Ash Treatment Basin/Gypsum Storage (See Note 1) | Trimble County Station | 401 KAR Chapter 5 KRS Chapter 151 | Division of Water - KPDES Permit and Dam Construction Permit | 2010 | \$11.84 (E) |
| 32 | Fly & Bottom Ash, Gypsum | CCP Storage Landfill (Phase I) | Trimble County Station | 401 KAR Chapter 5 401 KAR Chapter 45 | Division of Waste Management - Landfill Permit Division of Water - KPDES Permit | 2013 | \$33.86 (E) |
| 33 | Fly & Bottom Ash, Gypsum | Beneficial Reuse | Trimble County Station (see Note 2) | 401 KAR Chapter 45 | Permit-by-rule | 2010 | \$4.17 (E) |
| | | | All Stations (see Note 3) | | | on-going | N/A |
| | | | | | | | <u>\$462.55</u> |

Note 1: Combined, the KU/LG&E costs account for 75% of the total TC CCP project costs. KU and LG&E's costs split 48% / 52% respectively.

Note 2: Barge loading facility for fly ash beneficial reuse opportunity

Note 3: O&M for beneficial reuse opportunities - see Page 2 of 2

KENTUCKY UTILITIES COMPANY
2009 ENVIRONMENTAL COMPLIANCE PLAN (Case No. 2009-00197)

| Project | Air Pollutant or Waste/By-Product To Be Controlled | Control Facility | Generating Station | Estimated Annual Operations and Maintenance Costs (Through 2018) | | | | | | | | |
|---------|---|--|-------------------------------------|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | | | | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| 23 | Fly Ash, NO _x , SO ₂ , SO ₃ , Hg and Particulate | Selective Catalytic Reduction, Dry Electrostatic Precipitator, Pulverized Activated Carbon Injection, Hydrated Lime Injection, Fabric Filter Bag House, Wet Flue Gas Desulfurization, Wet Electrostatic Precipitator | Trimble Co. Unit 2 (See Note 1) | \$ 5,663,169 | \$ 8,860,635 | \$ 10,477,210 | \$ 11,219,570 | \$ 11,519,792 | \$ 11,796,886 | \$ 12,084,001 | \$ 12,438,277 | \$ 12,674,231 |
| 28 | NO _x | Selective Catalytic Reduction | Brown Unit 3 | \$ - | \$ - | \$ 649,267 | \$ 3,122,809 | \$ 3,193,154 | \$ 3,239,641 | \$ 3,335,614 | \$ 3,463,706 | \$ 3,572,886 |
| 29 | Fly & Bottom Ash, Gypsum | CCP Storage Ash Treatment Basin (Phase II) (see Note 2) | Brown Station | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| 30 | Fly & Bottom Ash, Gypsum | CCP Storage Landfill (Phase I) | Ghent Station | \$ 121,349 | \$ 128,630 | \$ 136,348 | \$ 19,003,308 | \$ 20,143,507 | \$ 21,352,117 | \$ 22,633,244 | \$ 23,991,239 | \$ 25,430,713 |
| 31 | Fly & Bottom Ash, Gypsum | CCP Storage Ash Treatment Basin/Gypsum Storage (See Note 2) | Trimble County Station | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| 32 | Fly & Bottom Ash, Gypsum | CCP Storage Landfill (Phase I) (See Note 3) | Trimble County Station | \$ - | \$ - | \$ - | \$ 1,050,070 | \$ 1,113,074 | \$ 1,179,859 | \$ 1,250,650 | \$ 1,325,689 | \$ 1,405,230 |
| 33 | Fly & Bottom Ash, Gypsum | Beneficial Reuse | Trimble County Station (see Note 4) | \$ 143,100 | \$ 303,372 | \$ 321,574 | \$ 340,869 | \$ 361,321 | \$ 383,000 | \$ 405,980 | \$ 430,339 | \$ 456,159 |
| | | | Trimble County Station (see Note 4) | \$ 252,000 | \$ 252,000 | \$ 252,000 | \$ 252,000 | \$ 252,000 | \$ 252,000 | \$ 252,000 | \$ 252,000 | \$ 252,000 |
| | | | Ghent Station (see Note 4) | \$ 3,786,868 | \$ 3,867,651 | \$ 1,215,311 | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| | | | All Stations | Note 5 | | | | | | | | |

- Note 1: Combined, the KU/LG&E costs account for 75% of the total TC AQCS O&M costs. KU and LG&E's costs split 81% / 19% respectively.
 Note 2: Brown Ash Treatment Basin expansion and Trimble County Ash Treatment Basin/Gypsum Storage do not incur any incremental O&M costs.
 Note 3: Combined, the KU/LG&E costs account for 75% of the total TC CCP O&M costs. KU and LG&E's costs split 48% / 52% respectively.
 Note 4: O&M for beneficial reuse opportunities
 Note 5: Expenses associated with future beneficial reuse projects will be incurred as opportunities are identified.

Statutory Notice

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

| | |
|---|----------------------------|
| THE APPLICATION OF KENTUCKY UTILITIES) | |
| COMPANY FOR CERTIFICATES OF PUBLIC) | |
| CONVENIENCE AND NECESSITY AND) | |
| APPROVAL OF ITS 2009 COMPLIANCE PLAN) | CASE NO. 2009-00197 |
| FOR RECOVERY BY ENVIRONMENTAL) | |
| SURCHARGE) | |

STATUTORY NOTICE

Kentucky Utilities Company (“KU”), by counsel, informs the Kentucky Public Service Commission (“Commission”) that it is engaged in business as an operating public utility, principally furnishing retail electric service within the Commonwealth of Kentucky.

Pursuant to KRS 278.183, KU hereby gives notice to the Commission that, on this 26th day of June 2009, it files herewith its application to issue an order granting KU Certificates of Public Convenience and Necessity for the construction of a Selective Catalytic Reduction Nitrogen Oxides emission control facility at E.W. Brown Unit 3 and for the construction of two landfills, one at the Ghent station and the other at the Trimble County station, and approving an amended compliance plan for purposes of recovering the costs of new pollution control facilities through its Electric Rate Schedule ECR.

Notice is further given that the proposed effective date for Electric Rate Schedule ECR is to become effective for bills rendered on and after January 28, 2010 (i.e. beginning with the environmental surcharge expense month of December 2009).

Submitted to the Commission this 26th day of June 2009.

Respectfully submitted,



Kendrick R. Riggs
W. Duncan Crosby III
Stoll Keenon Ogden PLLC
2000 PNC Plaza
500 West Jefferson Street
Louisville, Kentucky 40202
Telephone: (502) 333-6000

Allyson K. Sturgeon
Senior Corporate Attorney
E.ON U.S. LLC
220 West Main Street
Louisville, Kentucky 40202
Telephone: (502) 627-2088

Counsel for Kentucky Utilities Company

Tariff Sheet with Revision Marks

Kentucky Utilities Company

P.S.C. No. 14, First Revision of Original Sheet No. 87
Cancelling P.S.C. No. 14, Original Sheet No. 87

| Adjustment Clause | ECR |
|---|----------------------|
| Environmental Cost Recovery Surcharge | |
| APPLICABLE | |
| In all territory served. | |
| AVAILABILITY OF SERVICE | |
| To electric rate schedules RS, VFD, GS, AES, PS, TOD, LTOD, RTS, IS, ST.LT., P.O.LT., LE, TE, FAC, and DSM. | |
| RATE | |
| The monthly billing amount under each of the schedules to which this mechanism is applicable, including the fuel clause and demand-side management cost recovery mechanism, shall be increased or decreased by a percentage factor calculated in accordance with the following formula. | |
| $CESF = E(m) / R(m)$ | $MESF = CESF - BESF$ |
| MESF = Monthly Environmental Surcharge Factor CESF = Current Environmental Surcharge Factor BESF = Base Environmental Surcharge Factor | |
| E(m) is the jurisdictional total of each approved environmental compliance plan revenue requirement of environmental compliance costs for the current expense month and R(m) is the revenue for the current expense month as set forth below. | |
| DEFINITIONS | |
| <ol style="list-style-type: none">1) For all Plans, $E(m) = [(RB/12) (ROR + (ROR - DR) (TR / (1 - TR)))] + OE - BAS + BR$<ol style="list-style-type: none">a) RB is the Total Environmental Compliance Rate Base.b) ROR is the Rate of Return on Environmental Compliance Rate Base, designated as the overall rate of return [cost of short-term debt, long-term debt, preferred stock, and common equity].c) DR is the Debt Rate [cost of short-term debt, and long-term debt].d) TR is the Composite Federal and State Income Tax Rate.e) OE is the Operating Expenses [Depreciation and Amortization Expense, Property Taxes, Emission Allowance Expense and O&M expense adjusted for the Average Month Expense already included in existing rates]. Includes operation and maintenance expense recovery authorized by the K.P.S.C. in prior amended ECR Plan proceedings.f) BAS is the total proceeds from by-product and allowance sales.g) BR is the operation and maintenance expenses, and/or revenues if applicable, associated with Beneficial Reuse.2) Total E(m) (sum of each approved environmental compliance plan revenue requirement) is multiplied by the Jurisdictional Allocation Factor to arrive at the Net Jurisdictional E(m).3) The revenue R(m) is the average monthly base revenue for the Company for the 12 months ending with the current expense month. Base revenue includes the customer, energy and demand charge for each rate schedule to which this mechanism is applicable and automatic adjustment clause revenues for the Fuel Adjustment Clause and the Demand-Side Management Cost Recovery Mechanism as applicable for each rate schedule.4) Current expense month (m) shall be the second month preceding the month in which the Environmental Surcharge is billed. | |

T
T
T

Date of Issue: June 26, 2009

Date Effective: With Bills Rendered On and After January 28, 2010

Issued By: Lonnie E. Bellar, Vice President, State Regulation and Rates, Lexington, Kentucky

Certificate of Notice

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

| | |
|---|----------------------------|
| THE APPLICATION OF KENTUCKY UTILITIES) | |
| COMPANY FOR CERTIFICATES OF PUBLIC) | |
| CONVENIENCE AND NECESSITY AND) | |
| APPROVAL OF ITS 2009 COMPLIANCE PLAN) | CASE NO. 2009-00197 |
| FOR RECOVERY BY ENVIRONMENTAL) | |
| SURCHARGE) | |

CERTIFICATE OF NOTICE

Pursuant to the Kentucky Public Service Commission's Rules Governing Tariffs effective August 4, 1984, I hereby certify that I am Lonnie E. Bellar, Vice President, State Regulation and Rates, for Kentucky Utilities Company ("KU" or "Company"), a utility furnishing retail electric service within the Commonwealth of Kentucky, which, on the 26th day of June 2009, filed an application to issue an order granting KU Certificates of Public Convenience and Necessity for the construction of a Selective Catalytic Reduction Nitrogen Oxides emission control facility at E.W. Brown Unit 3 and for the construction of two landfills, one at the Ghent Generating Station and the other at the Trimble County Generating station, and approving an amended compliance plan for purposes of recovering the costs of new pollution control facilities through its Electric Rate Schedule ECR as required by KRS 278.183, as follows:

On the 26th day of June 2009, the same was delivered for exhibition and public inspection at the offices and places of business of the Company in the territory affected thereby, to-wit, at the following places:

| | |
|----------------|-------------|
| Barlow | London |
| Campbellsville | Maysville |
| Carrollton | Middlesboro |
| Danville | Morehead |
| Earlington | Morganfield |

Eddyville
Elizabethtown
Georgetown
Greenville
Harlan
Lexington
Lexington North

Mt. Sterling
Paris
Richmond
Shelbyville
Somerset
Versailles
Winchester

and that the same will be kept open to public inspection at said offices and places of business in conformity with the requirements of 807 KAR 5:011, Section 8.

I further certify that more than twenty (20) customers will be affected by said change by way of an increase in their bills, and that on the 11th day of June 2009, there was delivered to the Kentucky Press Association, an agency that acts on behalf of newspapers of general circulation throughout the Commonwealth of Kentucky in which customers affected reside, for publication therein once a week for three consecutive weeks beginning the week of June 19, 2009, a notice of the filing of KU's application, a copy of said notice being attached hereto. A certificate of publication of said notice will be furnished to the Kentucky Public Service Commission upon completion of same pursuant to 807 KAR 5:011, Section 8(2)(c).

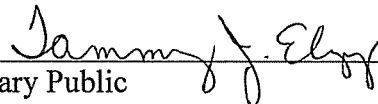
In addition, Kentucky Utilities Company will include a general statement explaining the application in this case with the bills for all Kentucky retail customers during the course of their regular monthly billing cycle beginning on June 29, 2009.

Given under my hand this 26th day of June 2009.



Lonnie E. Bellar
Vice President, State Regulation and Rates
Kentucky Utilities Company
220 West Main Street
Louisville, Kentucky 40202

Subscribed and sworn to before me, a Notary Public in and before said County and State,
this 26th day of June 2009.



Notary Public (SEAL)

My Commission Expires:

November 9, 2010

NOTICE TO CUSTOMERS OF
KENTUCKY UTILITIES COMPANY

RECOVERY BY ENVIRONMENTAL SURCHARGE OF KENTUCKY UTILITIES
COMPANY'S 2009 ENVIRONMENTAL COMPLIANCE PLAN

PLEASE TAKE NOTICE that on June 26, 2009, Kentucky Utilities Company ("KU") will file with the Kentucky Public Service Commission ("Commission") in Case No. 2009-00197, an Application pursuant to Kentucky Revised Statute 278.183 for approval of an amended compliance plan ("KU's 2009 Environmental Compliance Plan") for the purpose of recovering the capital costs and operation and maintenance costs associated with new pollution control facilities through an environmental surcharge on customers' bills beginning February 2010, under KU's existing rate mechanism known as the environmental cost recovery surcharge or "Electric Rate Schedule ECR."

Federal, state and local environmental regulations require KU to continually build and upgrade equipment and facilities in order to operate in an environmentally sound manner. Specifically, KU is seeking Commission approval of a Certificate of Public Convenience and Necessity ("CPCN") to construct a new Selective Catalytic Reduction system ("SCR") for Brown Unit 3 at the E.W. Brown Generating Station in Burgin, Kentucky to comply with federally mandated nitrogen oxides requirements, and approval for CPCNs to construct new landfill facilities at the Ghent Generating Station in Ghent, Kentucky and at the Trimble County Generating Station near Wises Landing in Trimble County, Kentucky.. Additionally, KU is seeking recovery of costs associated with these environmental projects, which are necessary for compliance with the Federal Clean Air Act, the Federal Clean Water Act and the Federal Resource Conservation and Recovery Act. These additional projects primarily relate to installation of an SCR system on Brown Unit 3, expansion of the coal combustion byproduct ("CCP") treatment basin at the E.W. Brown Generation Station, expansion of the CCP treatment basins at the Trimble County Generating Station, construction of new landfill facilities at the Ghent and Trimble County generating stations, and certain operating costs associated with the Air Quality Control System equipment necessary to operate Trimble County Unit 2 within the approved environmental limitations. The capital cost of the new pollution control facilities for which KU is seeking recovery at this time is estimated to be \$463 million. Additional operation and maintenance expense will be incurred for these facilities.

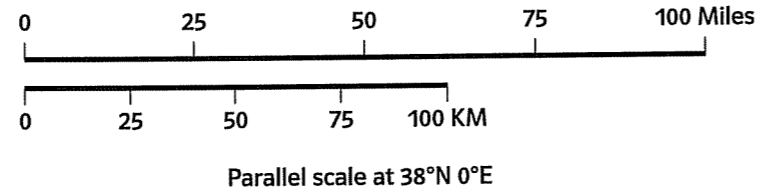
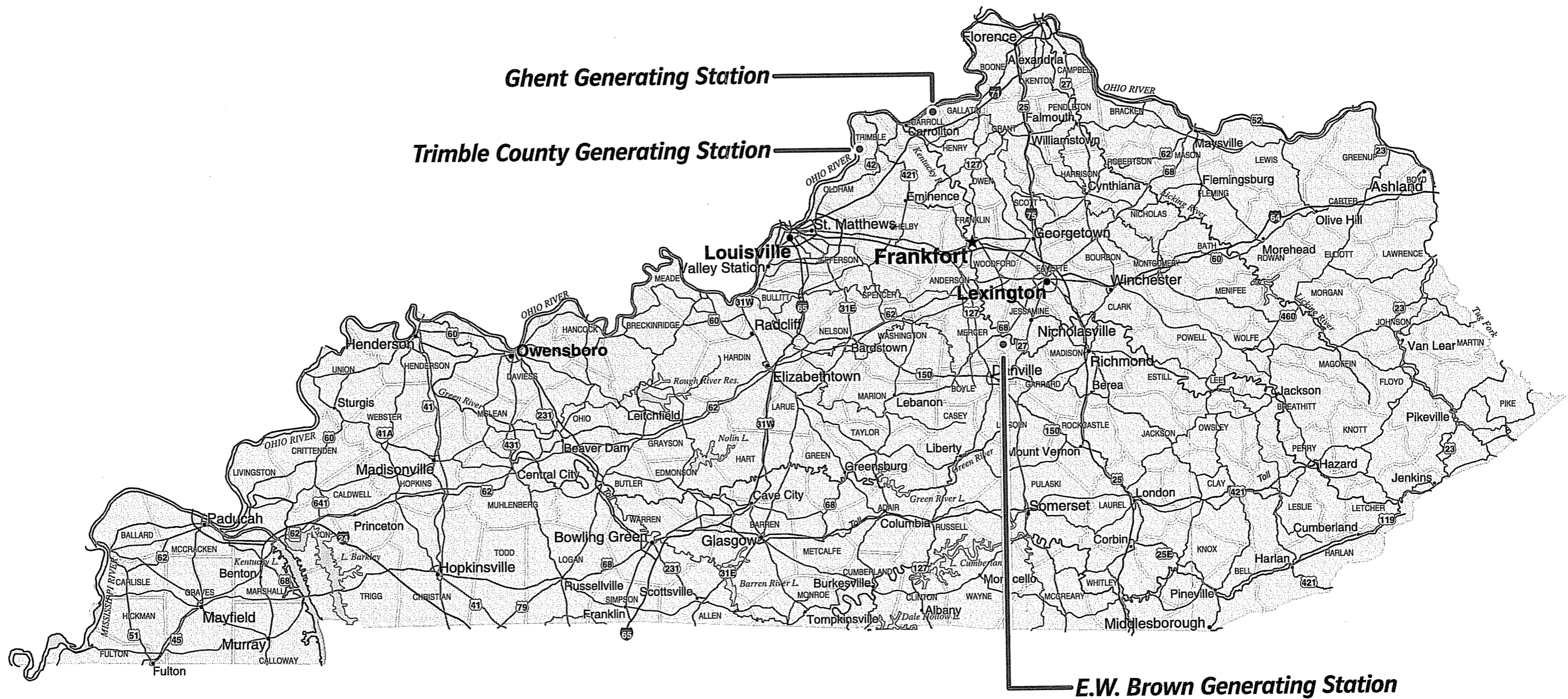
The estimated impact on a residential customer using 1,000 kilowatt hours per month is expected to be an initial monthly increase of \$0.99 for KU customers during 2010, with the maximum monthly increase expected to be \$3.73 during 2013.

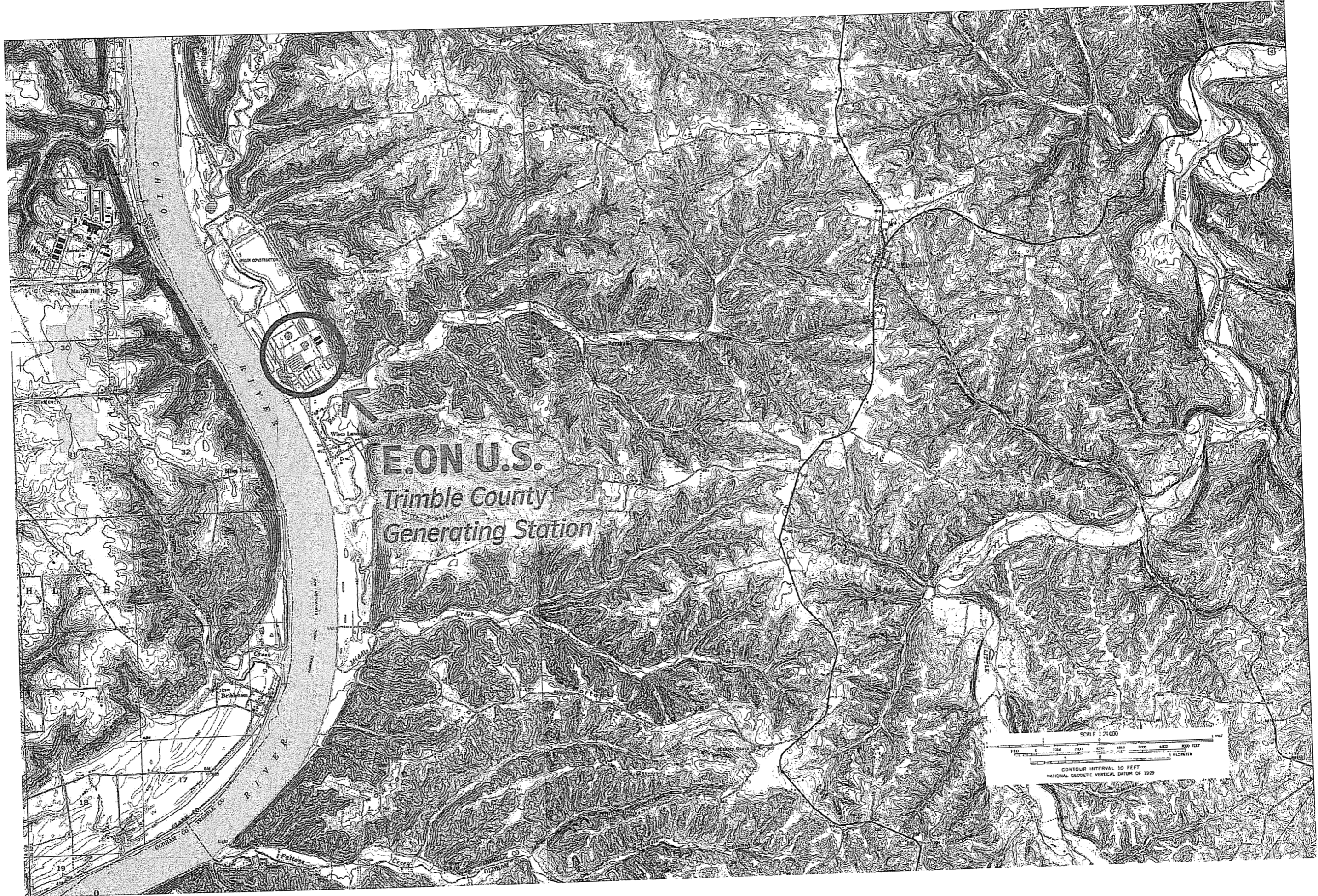
The Environmental Surcharge Application described in this Notice is proposed by KU. However, the Public Service Commission may issue an order modifying or denying KU's Environmental Surcharge Application. Such action may result in an environmental surcharge for consumers other than the environmental surcharge described in this Notice.

Any corporation, association, body politic or person may, by motion within thirty (30) days after publication, request leave to intervene in Case No. 2009-00197. That motion shall be submitted to the Public Service Commission, 211 Sower Blvd., P.O. Box 615, Frankfort, Kentucky, 40602, and shall set forth the grounds for the request including

the status and interest of the party. Intervenors may obtain copies of the Application and testimony by contacting Kentucky Utilities Company at 220 West Main Street, Louisville, Kentucky, 40202, Attention: Lonnie E. Bellar, Vice President, State Regulation and Rates. A copy of the Application and testimony will be available for public inspection at KU's offices where bills are paid after June 26, 2009.

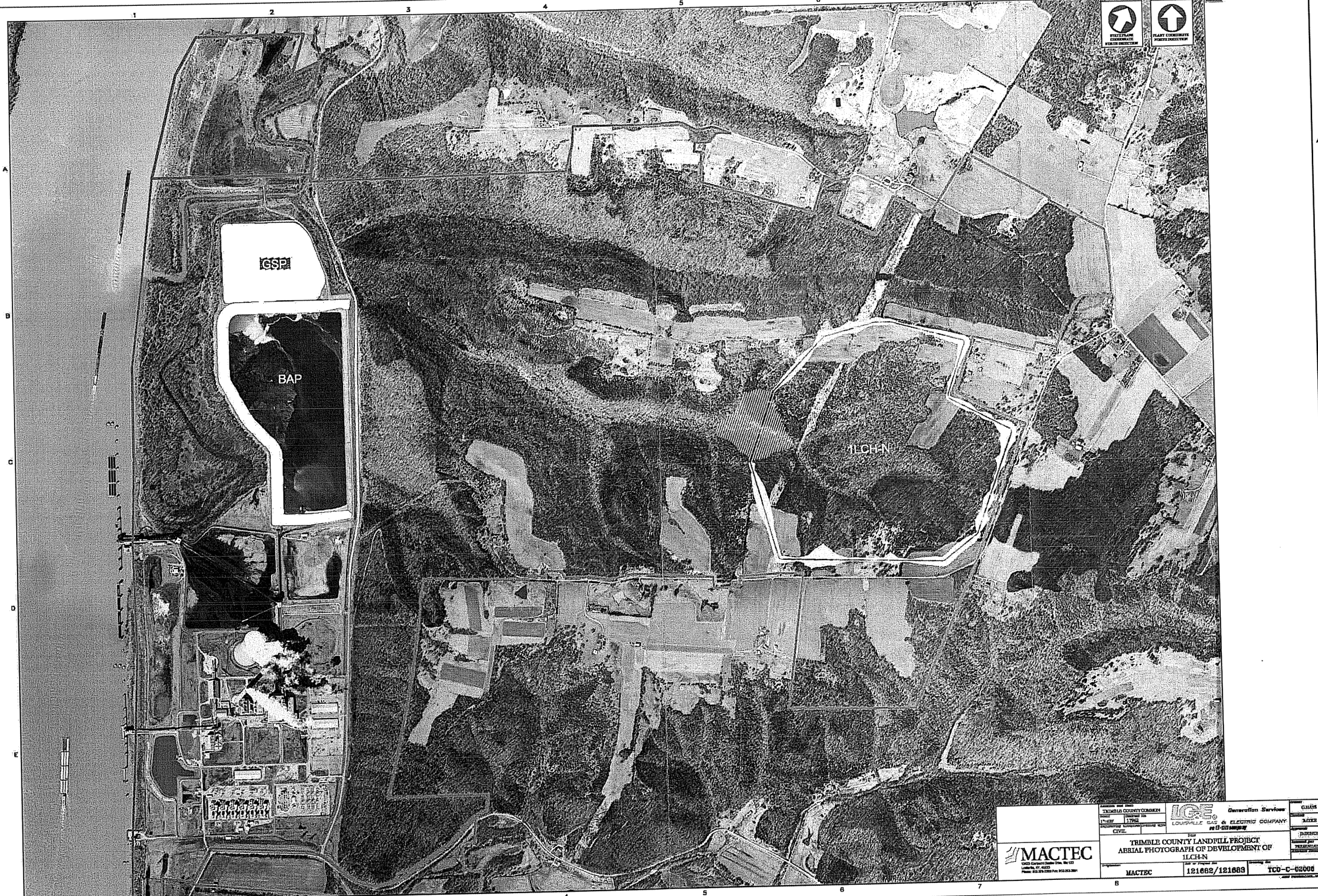
Maps



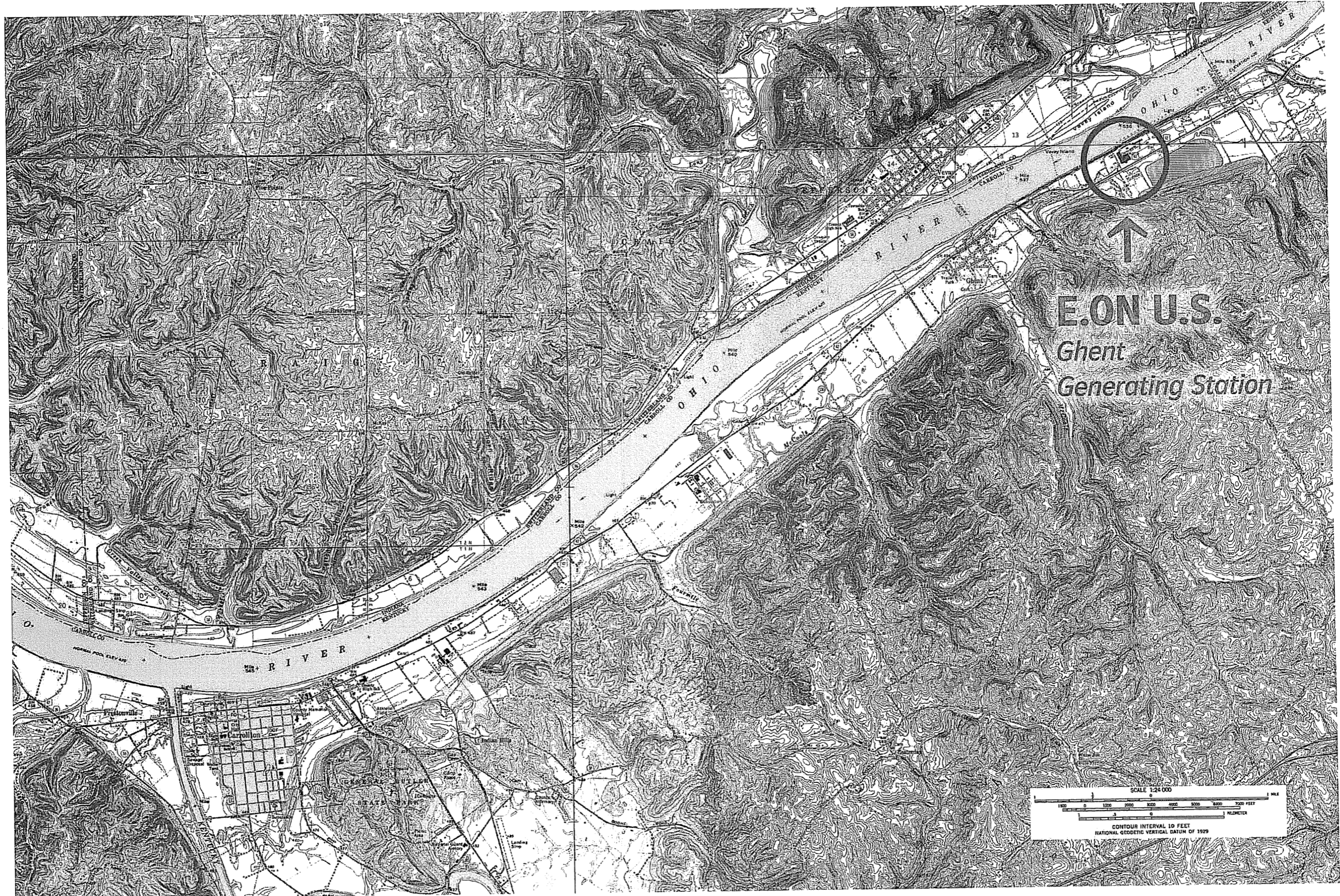


E.ON U.S.
Trimble County
Generating Station

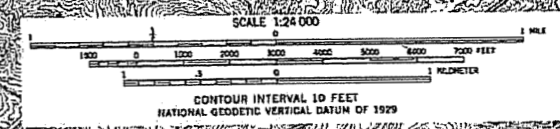
SCALE 1:24,000
1 2 3 4 5 6 7 8 9 10
0 100 200 300 400 500 600 700 800 900 1000
0 1 2 3 4 5 6 7 8 9 10
CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

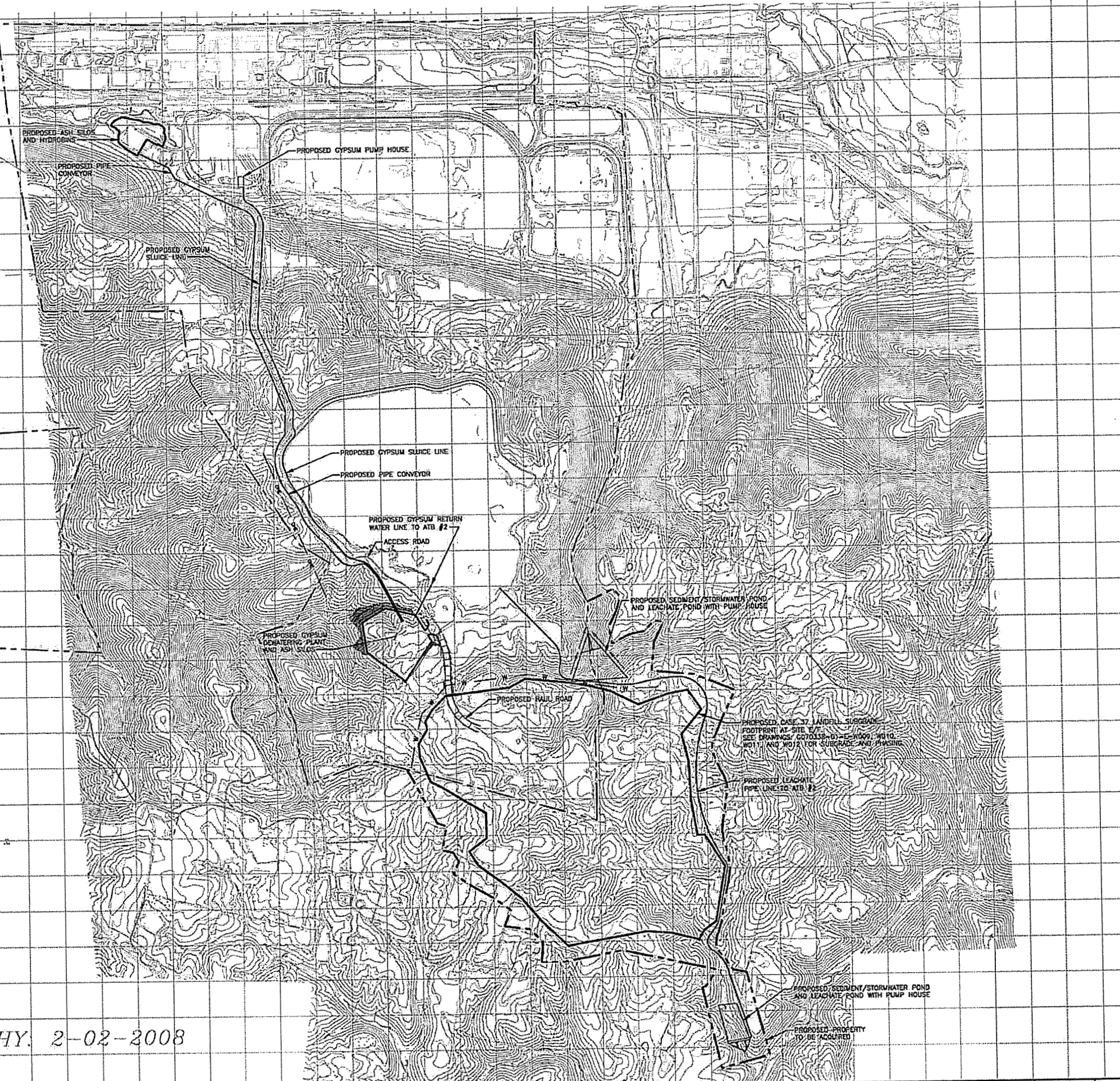
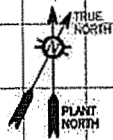


| | | | |
|--|---|--|--|
| <p>MACTEC <small>LAND DEVELOPMENT GROUP</small> 1000 Eastman Drive, Ste. 100 Louisville, KY 40223 Phone: 502.261.2200 Fax: 502.261.2201</p> | <p>TRIMBLE COUNTY CEMETERY Parcel No. 17942 CIVIL</p> | <p>LGE Generation Services LOUISVILLE GAS & ELECTRIC COMPANY <small>a subsidiary of E.ON ENERGY</small></p> | <p>CLIENT AECOM DIVISION PROJECT NO. DRAWING NO.</p> |
| | <p>TRIMBLE COUNTY LANDFILL PROJECT AERIAL PHOTOGRAPH OF DEVELOPMENT OF 1LCH-N</p> | | <p>DATE OF PROJECT TCD-C-02006</p> |
| <p>MACTEC</p> | <p>121662/121663</p> | <p>TCD-C-02006</p> | |



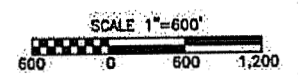
E.ON U.S.
Ghent
Generating Station





- LEGEND**
- EXISTING PROPERTY LINE (APPROXIMATE)
 - - - - - PROPERTY TO BE ACQUIRED (APPROXIMATE)
 - EXISTING OVERHEAD ELECTRIC LINE
 - RELOCATED OVERHEAD ELECTRIC LINE
 - AIR LIQUIDE LINE (APPROXIMATE)
 - RELOCATED AIR LIQUIDE LINE (APPROXIMATE)
 - EXISTING CARROLL COUNTY WATER DISTRICT LINE (APPROXIMATE)
 - RELOCATED CARROLL COUNTY WATER DISTRICT LINE (APPROXIMATE)
 - DIVERSION CHANNEL

OF PHOTOGRAPHY. 2-02-2008



| DRAWING RELEASE RECORD | | | | | DRAWING RELEASE RECORD | | | | |
|------------------------|------|----------|----------|--------------------------|------------------------|------|----------|----------|---------|
| REV. | DATE | PREPARED | APPROVED | PURPOSE | REV. | DATE | PREPARED | APPROVED | PURPOSE |
| A | | JJC | | Original Drawing Release | | | | | |

gi

PROJECT NO./DASH NO. G070338-01
DRAWING NO. W040

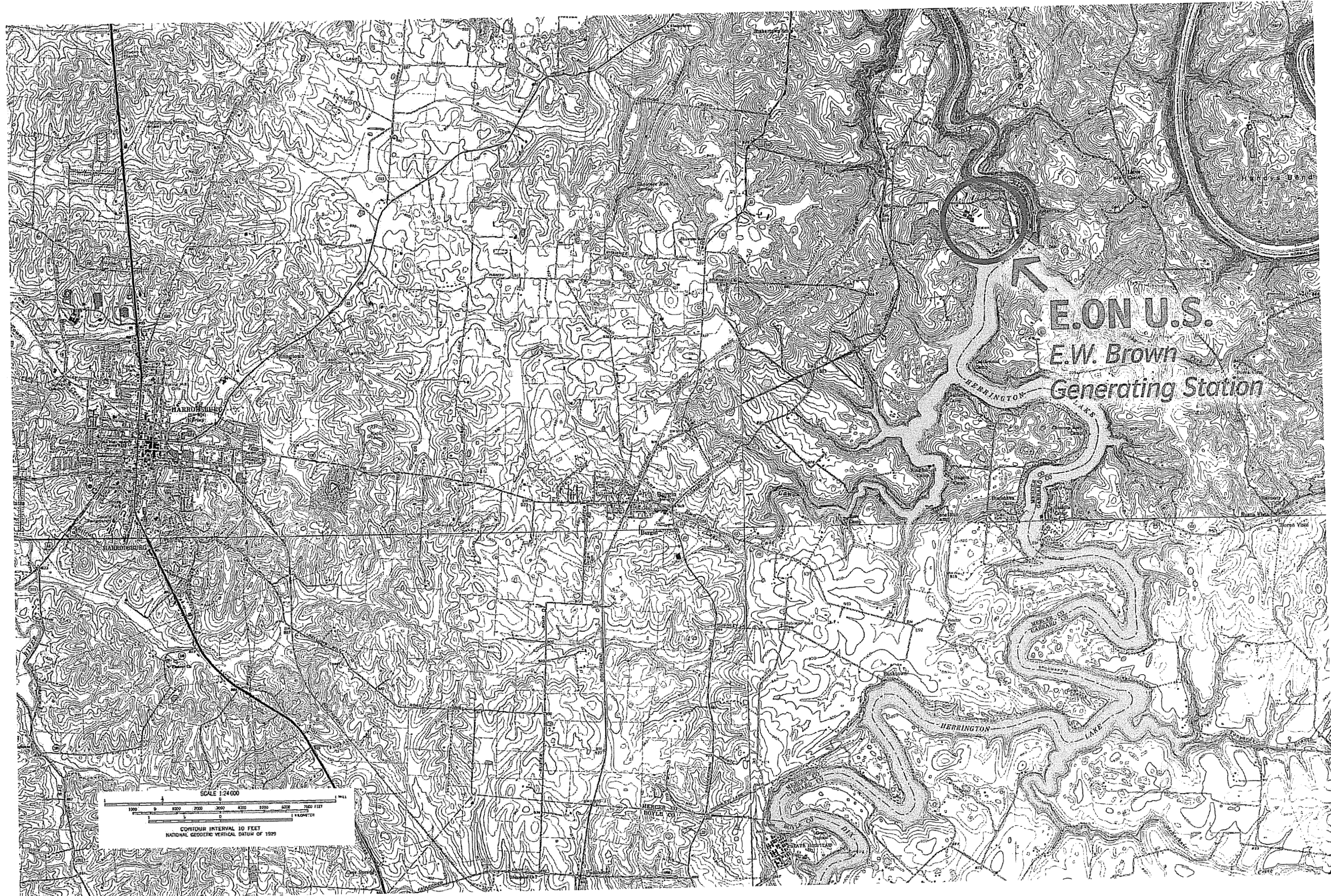
TASK NO. 001

| | |
|----------------|---------|
| SCALE | 1"=600' |
| PROJECT NUMBER | |

ASH POND AND LANDFILL PROJECT
FINAL CONCEPTUAL DESIGN
CASE 37 - OVERVIEW

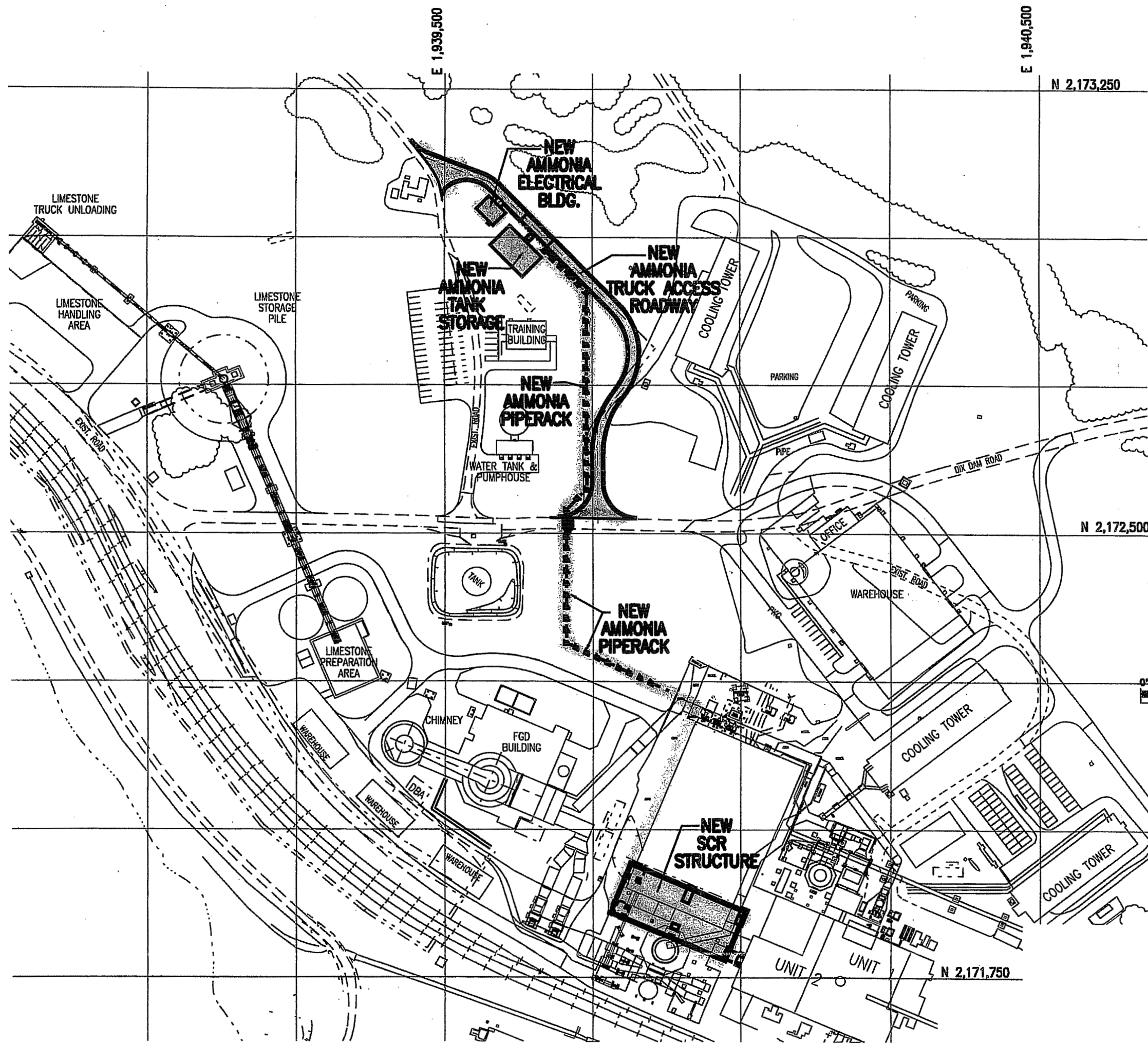


Location and Unit:



E.ON U.S.
E.W. Brown
Generating Station

SCALE 1:24,000
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
0 1 2 3 4 5 KILOMETERS
CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929



NOTES

1. COORDINATES SHOWN ON THIS DRAWING ARE BASED ON THE KENTUCKY STATE PLANE, SOUTH ZONE, NAD 83.
2. EXISTING SITE CONDITIONS AND TOPOGRAPHY ARE TAKEN FROM AN AERIAL SURVEY DATED SEPTEMBER 1, 2005 BY L. ROBERT KIRKALL AND ASSOCIATES INC.

0' 50' 100' 200' 300' 400'
GRAPHIC SCALE 1"=100'

THIS
**BROWN SCR PROJECT
OVERALL SITE PLAN
CIVIL**
Location and Units:
E. W. BROWN UNITS 3



COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF KENTUCKY UTILITIES)
COMPANY FOR CERTIFICATES OF PUBLIC)
CONVENIENCE AND NECESSITY AND)
APPROVAL OF ITS 2009 COMPLIANCE PLAN) CASE NO. 2009-00197
FOR RECOVERY BY ENVIRONMENTAL)
SURCHARGE)

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

Filed: June 26, 2009

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

2 A. My name is Lonnie E. Bellar. I am the Vice President, State Regulation and Rates for
3 Kentucky Utilities Company (“KU”) and Louisville Gas and Electric Company
4 (“LG&E”) (collectively, “the Companies”), and am an employee of E.ON U.S.
5 Services Inc., which provides services to the Companies. My business address is 220
6 West Main Street, Louisville, Kentucky 40202. A complete statement of my
7 education and work experience is attached to this testimony as Appendix A.

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

9 A. Yes. I have testified several times, including Case Nos. 2008-00251¹ and 2008-
10 00252,² the Companies’ most recent base rate cases.

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

12 A. My testimony provides an overview of the testimony of our other witnesses and
13 outlines the reasons for our request for approval of Certificates of Public Convenience
14 and Necessity (“CPCNs”) associated with the construction of Selective Catalytic
15 Reduction (“SCR”) Nitrogen Oxides (“NO_x”) control technology at Brown Unit 3,
16 and with the construction of landfills at the Ghent and Trimble County generating
17 stations. I will also address the plan to finance the proposed construction of the SCR
18 and CCP storage facilities. Also, I will present an overview of KU’s 2009
19 Environmental Compliance Plan (“2009 Plan”). KU’s 2009 Plan includes: (1) the
20 SCR; (2) KU’s allocated share of the operating and maintenance costs of the Air
21 Quality Control Systems (“AQCS”) currently being installed on Trimble County Unit

¹ In the Matter of: *The Application of Kentucky Utilities Company for an Adjustment of Electric Base Rates*

² In the Matter of: *The Application of Louisville Gas and Electric Company for an Adjustment of Its Electric and Gas Base Rates*

1 2 (“Trimble 2”), the capital cost of which is included in KU’s 2006 Plan³ as Project
2 No. 23; (3) CCP storage facilities at Ghent, Brown, and Trimble County; and (4)
3 recovery of certain capital and operating and maintenance costs KU will incur to take
4 advantage of opportunities to beneficially reuse CCP rather than dispose of 100% of
5 it on site in either existing or new CCP storage facilities. Finally, I will explain why
6 KU is seeking environmental surcharge recovery of its 2009 Plan through its
7 Environmental Cost Recovery (“ECR”) Surcharge tariff, for bills rendered on and
8 after January 28, 2010, including KU’s request for continuing the current 10.63
9 percent return on common equity.

10 *Overview of Testimony*

11 **Q. Would you please provide an overview of the testimony of the witnesses**
12 **supporting KU's application in this proceeding?**

13 A. Yes. In addition to my testimony, KU is presenting the testimony of four other
14 witnesses in this case in support of its application. These witnesses and the subjects
15 of their testimonies are:

- 16 • John N. Voyles, Vice President of Transmission and Generation Services,
17 presents testimony that describes the projects and the need for the projects in
18 KU’s 2009 Plan. Mr. Voyles also presents testimony in support of KU’s
19 settlement of the NSR litigation with the U.S. Environmental Protection
20 Agency (“EPA”). Mr. Voyles also presents testimony concerning the
21 environmental regulatory requirements faced by the Companies, including a

³ In the Matter of *The Application of Kentucky Utilities Company for a Certificate of Public Convenience and Necessity to Construct Selective Catalytic Reduction Systems and Approval of its 2006 Compliance Plan for Recovery by Environmental Surcharge* (Case No. 2006-00206)

1 description of the Clean Air Interstate Rule (“CAIR”), the New Source
2 Review (“NSR”) regulation, and the rules and regulations governing the
3 handling and disposal of the solid waste material produced as a result of coal
4 combustion.

5 • Charles R. Schram, Director, Energy Planning, Analysis and Forecasting,
6 presents testimony on the cost-effectiveness of the projects in KU’s 2009
7 Plan.

8 • Shannon L. Charnas, Director of Utility Accounting and Reporting, presents
9 testimony affirming that none of the costs for which KU is seeking recovery
10 through its Environmental Surcharge tariff are included in base rates and
11 describes the accounting associated with the projects in KU’s 2009 Plan
12 consistent with the Commission’s prior orders.

13 • Robert M. Conroy, Director of Rates, presents KU’s proposed Electric Rate
14 Schedule ECR and corresponding monthly reporting requirements and
15 presents testimony affirming that the calculation of KU’s environmental
16 surcharge will comply with all previous Commission Orders. Mr. Conroy
17 also presents the revisions to the monthly ECR reporting forms that KU
18 proposes, and explains why the revisions to the forms are appropriate.

19 *Certificates of Public Convenience and Necessity*

20 **Q. Is KU requesting CPCNs in this proceeding?**

21 A. Yes. KU is seeking Commission approval in the form of a CPCN to construct a SCR
22 NO_x control facility at the Brown Unit 3 in order to comply with KU’s settlement of
23 the NSR litigation initiated by the U.S. Department of Justice, on behalf of the EPA,

1 in 2007. Mr. Voyles's testimony addresses the history of the litigation and explains
2 why KU's agreement to the terms of the Consent Decree which includes the
3 construction of the SCR is in the best long-term interests of KU's customers.

4 Additionally, KU is seeking Commission authority, in the form of CPCNs, to
5 construct CCP storage facilities at the Ghent and Trimble County generating stations.
6 As explained in Mr. Voyles's testimony, KU must expand its CCP storage facilities at
7 these two stations, and due to the financial commitments necessitated by the projects,
8 KU determined that CPCNs are necessary. KU is, in this Application, requesting the
9 Commission's authority to construct the two identified facilities. Because of its joint
10 ownership of Trimble County Unit 2, LG&E will be a part-owner of the new CCP
11 storage facilities at Trimble County, and is requesting similar authority in Case No.
12 2009-00198⁴.

13 **Q. Would you please briefly discuss the SCR facility proposed for Brown Unit 3?**

14 A. Yes. As is discussed more thoroughly in Mr. Voyles's testimony, in 2006 the EPA
15 issued a notice of violation to KU related to boiler and turbine work performed by
16 KU in 1997. The notice of violation claimed that the work that KU performed in
17 1997 was a major modification of the unit, not merely routine maintenance work, and
18 therefore should have made Brown Unit 3 subject to a New Source Review under
19 more stringent Clean Air Act requirements, which review would have required the
20 use of the Best Available Control Technology ("BACT") to reduce the unit's various
21 emissions. Therefore, the notice of violation cited KU for not engaging in a new

⁴ In the Matter of : *The Application of Louisville Gas and Electric Company For A Certificate of Public Convenience and Necessity and Approval of Its 2009 Compliance Plan for Recovery By Environmental Surcharge.*

1 source review at the time of the Brown 3 maintenance in 1997. After the EPA issued
2 its notice of violation, the U.S. Department of Justice (“DOJ”) initiated litigation
3 against KU concerning the notice of violation. As Mr. Voyles discusses, KU entered
4 into settlement discussions with the DOJ and EPA, and determined that agreeing to a
5 settlement of the litigation by, among other things, agreeing to build an SCR for
6 Brown 3, was the most reasonable likely resolution to the litigation (SCR is generally
7 considered to be BACT for reducing NO_x emissions).

8 In addition to installation of the SCR, KU also formally committed to install
9 flue gas desulfurization controls for Brown 3 (which was already under construction).
10 Other elements of the Consent Decree include (1) payment of a \$1.4 million civil
11 penalty; (2) funding of \$3 million in environmental mitigation projects consisting of a
12 carbon sequestration test well project, low emission school bus retrofit program, and
13 Mammoth Cave forestry project; (3) surrender of excess SO₂ and NO_x emissions
14 allowances; and (4) compliance with specified emissions limits and heat input limits.

15 KU determined that settlement on these terms was ultimately in the best
16 interests of KU and its customers. As Mr. Voyles discusses at length, KU faced a
17 variety of litigation risks ranging from the assessment of major civil penalties to
18 potential imposition of significant operational restrictions, including the possible
19 imposition of an absolute emission limit of 0.10 lbs SO₂/mmBtu. This absolute
20 emission limit would have required KU to procure low- to medium-sulfur coals that
21 would result in increased fuel costs of nearly \$400 million from 2010 to 2026. For
22 these reasons, KU believes that the settlement it negotiated was and is prudent, and

1 that building the Brown 3 SCR is a prudent investment the Commission should grant
2 KU a CPCN and allow KU to recover through its ECR mechanism.

3 Mr. Schram presents additional testimony that addresses the analysis of cost-
4 effective compliance with the terms of the Consent Decree.

5 **Q. What is the construction timeframe for the SCR and for the CCP storage**
6 **facilities?**

7 A. As indicated in the Application and in Mr. Voyles's testimony, KU expects the SCR
8 construction to take 18 – 24 months to complete, with the unit being placed in-service
9 no later than December 2012. The anticipated in-service date complies with the terms
10 of the Consent Decree. Construction of the Ghent CCP storage facility is expected to
11 take approximately three years to complete, with the landfill being placed in service
12 in 2013. Similarly, the Trimble County landfill is expected to be placed in service in
13 2013, after approximately 18-24 months of construction.

14 **Q. When does KU need to begin construction of the SCR and CCP landfills to meet**
15 **the proposed in-service dates?**

16 A. Based upon the preliminary engineering design work, KU anticipates the need to
17 commence construction of the SCR facility in early 2010 to meet the proposed 2012
18 in-service date. KU anticipates needing to begin property acquisition in the second
19 half of 2009 and start construction in the first half of 2010 for the Ghent CCP landfill.
20 KU anticipates starting construction on the Trimble County CCP landfill in the
21 second half of 2010. For these reasons, KU is requesting that the Commission issue
22 its CPCN authorizations by December 23, 2009. To date, KU has not executed any
23 contracts for the acquisition or construction of the proposed facilities.

1 **Q. What is KU's anticipated investment in the proposed SCR and CCP facilities?**

2 A. KU estimates that the capital investment in the SCR will be approximately \$184
3 million; the capital investment in Phase I of the Ghent CCP landfill will be
4 approximately \$204 million; and the capital investment in Phase I of the Companies'
5 portion of the Trimble County CCP landfill will be approximately \$71 million (of
6 which KU will share 48% as discussed below). The support for these estimates is
7 discussed in Mr. Voyles's testimony.

8 **Q. How do the Companies propose to determine their ownership shares of the new
9 CCP storage facility at the Trimble County generating station?**

10 A. The Companies propose to allocate their ownership of the new CCP storage facility at
11 the Trimble County generating station on the basis of their ownership of the
12 nameplate generating capacity ratings of the two generating units at the station, as
13 shown in Table 1 below. The proposed allocation would result in LG&E's ownership
14 share of the Companies' portion being 52% and KU's being 48%; LG&E will own
15 39% and KU will own 36% of the total facility.

16 **Table 1**

| | <u>Nameplate Rating</u> | <u>IMEA/IMPA Share</u> | <u>Companies' Share</u> | <u>LG&E Share</u> | <u>KU Share</u> |
|---|-----------------------------|----------------------------|-----------------------------|---------------------------|---------------------|
| TC1 (MW) | 566 | 141.5 | 424.5 | 424.5 | 0 |
| TC2 (MW) | 838 | 209.5 | 628.5 | 119.4 | 509.1 |
| Total (MW) | 1404 | 351 | 1053 | 543.9 | 509.1 |
| Companies' Allocation of Their Combined Ownership Share | | | 75% | 52% | 48% |
| Total Ownership | | 25% | | 39% | 36% |

17

1 **Q. How does the Company plan to finance construction of the SCR and CCP**
2 **facilities?**

3 A. KU expects to finance the costs of the new facilities with a combination of new debt
4 and equity. The mix of debt and equity used to finance the project will be determined
5 so as to allow KU to maintain its strong investment-grade credit rating. To the extent
6 that tax exempt financing may be available for these projects, the Companies
7 anticipate using such opportunities to the extent that they are reasonably cost-
8 effective.

9 **Q. Will KU obtain the necessary permits for the facilities for which CPCNs are**
10 **being requested?**

11 A. Yes. As described in detail in Mr. Voyles's testimony, KU either has obtained or is
12 in the process of developing the applications for all environmental and construction
13 permits. KU anticipates a favorable disposition of its permit applications.

14 **Q. May the Commission grant KU the CPCN it requests before the permitting**
15 **process is complete?**

16 A. Yes, the Commission may grant the requested CPCN before the permitting process is
17 complete. KRS 278.020(1) states that a CPCN shall expire within one year of the
18 Commission's granting thereof, "exclusive of any delay due to the ... failure to obtain
19 any necessary grant or consent" The statute therefore clearly anticipates
20 situations in which the Commission may grant CPCNs prior to the CPCN applicants'
21 having obtained all other necessary permits.

1 **Q. Did the Commission issue a certificate of public convenience and necessity which**
2 **includes the pollution control facilities to be built as part of the Trimble County**
3 **Unit 2?**

4 A. Yes. The environmental equipment to be built in connection with the construction of
5 Trimble County Unit 2 is included in the authority of the CPCN issued by the
6 Commission in its Order dated November 1, 2005, in Case No. 2004-00507.⁵

7 **Q. Will KU seek recovery of the costs of the SCR and CCP facilities through the**
8 **Environmental Cost Recovery mechanism?**

9 A. Yes. KU, in this proceeding, is seeking approval of the CPCNs, the 2009 Plan, and
10 cost recovery through the Environmental Cost Recovery mechanism. The CPCNs are
11 requested pursuant to the requirements of KRS 278.020, while cost recovery is
12 requested consistent with regulatory requirements under KRS 278.183, as applied by
13 the Commission.

14 ***2009 Environmental Surcharge Plan and Recovery***

15 **Q. Is KU proposing a 2009 Environmental Surcharge Plan in this proceeding?**

16 A. Yes. The projects in KU's 2009 Plan serve its Ghent and E.W. Brown generating
17 stations, as well as KU's ownership of Trimble County Unit 2 ("TC2"), which is now
18 under construction. KU's 2009 Plan contains six new capital projects (along with
19 their associated operating and maintenance ("O&M") expenses), as well as a
20 modification to Project 23 in KU's 2006 Plan, which will allow KU to recover its
21 share of the O&M expenses associated with the Trimble 2 AQCS (Project 23 already

⁵ 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.*

1 includes the capital costs of the Trimble 2 AQCS). KU's 2009 Plan is attached as
2 Exhibit JNV-1 to Mr. Voyles's testimony. Mr. Voyles's testimony presents KU's
3 2009 Plan, describes the need for the new projects in that plan, and provides the
4 timeframe for construction of the projects. Mr. Voyles's testimony also presents
5 KU's evidence concerning the applicable environmental regulatory requirements and
6 shows how the pollution control facilities in the 2009 Plan satisfy KU's
7 environmental obligations. Mr. Schram's testimony provides evidence as to the cost-
8 effectiveness of the projects and details the estimated capital cost of \$463 million for
9 the projects.

10 **Q. What evidence does KU present on the accounting of the cost for the 2009 Plan?**

11 A. Ms. Charnas's testimony explains KU's reporting and accounting for the capital costs
12 and operation and maintenance expenses associated with the pollution control
13 facilities described in Mr. Voyles's testimony. Ms. Charnas further affirms that the
14 environmental compliance costs KU proposes to recover through its surcharge are not
15 already in existing rates and, as applicable, that the accounting will be consistent with
16 the Commission's prior orders.

17 **Q. What evidence does KU present concerning cost recovery and reporting under
18 its ECR surcharge rider?**

19 A. Mr. Conroy presents testimony to explain KU's changes to its monthly reporting
20 requirements and affirming that the calculation of KU's environmental surcharge will
21 comply with all previous Commission Orders. Mr. Conroy also presents the revisions
22 to the monthly ECR reporting forms that KU proposes, and explains why the
23 revisions to the forms are appropriate.

1 *2009 Compliance Plan Overview*

2 **Q. Please describe the nature of the projects KU is including in its 2009 Compliance**
3 **Plan.**

4 A. As summarized in Exhibit JNV-1 to Mr. Voyles's testimony and with the exception
5 of Project No. 28 (Brown 3 SCR), KU's 2009 Compliance Plan is focused almost
6 exclusively on projects to properly handle and store solid waste resulting from coal
7 combustion at three of KU's generating facilities. The coal combustion process
8 results in quantities of CCP that must be safely stored in such a way as to avoid
9 release into surface waterways and ground water. Over time, the existing CCP
10 storage facilities have neared capacity and KU has been studying and evaluating
11 alternatives for additional CCP storage capacity. This evaluation process is presented
12 in Exhibit JNV-2, *Louisville Gas and Electric Company and Kentucky Utilities*
13 *Company Comprehensive Coal Combustion Byproduct Strategy*, which describes
14 and summarizes the nature of the CCP storage requirements the Companies face and
15 the alternatives developed for meeting the CCP storage needs. KU's proposed CCP
16 storage projects will provide the Company with long-term storage for CCP in
17 compliance with all applicable laws and regulations.

18 **Q. How do additional CCP storage needs affect KU's commitment to the**
19 **responsible use of coal-fired generation?**

20 A. The additional CCP storage needs KU faces do not affect the Company's long-
21 standing commitment to the efficient, safe and environmentally responsible use of
22 coal as a fuel source in its generating facilities. The Company's commitment to coal
23 use is evidenced by the type of power plants in which KU has historically invested,

1 and continues to invest, to meet its service requirements, consistent with the stated
2 policy of Kentucky's General Assembly in KRS 278.020(1): "[It is] the policy of the
3 General Assembly to foster and encourage the use of Kentucky coal by electric
4 utilities serving the Commonwealth." The Companies are demonstrating their long-
5 term commitment to the safe, clean, and efficient use of coal by their significant
6 investment in Trimble County Unit 2, a new 750 MW pulverized-coal super-critical
7 unit employing state-of-the-art air pollution control equipment to ensure
8 environmental compliance.

9 **Q. At which facilities does KU operate CCP storage facilities?**

10 A. KU owns, or partially owns, coal generating facilities (and therefore CCP storage
11 facilities) at five locations: Tyrone Generating Station located in Anderson County,
12 Kentucky; Green River Generating Station located in Muhlenberg County, Kentucky;
13 E.W. Brown Generating Station located in Mercer County, Kentucky, Ghent
14 Generating Station located in Carroll County, Kentucky, and Trimble County
15 Generating Station located in Trimble County, Kentucky. Please see Exhibit LEB-1
16 for a summary of KU's existing facilities and storage capacities.

17 **Q. Please describe the current status of KU's CCP storage facilities at its E.W.
18 Brown generating station.**

19 A. KU operates a main ash treatment basin and an auxiliary ash treatment basin at its
20 Brown generating station. The main ash treatment basin was originally
21 commissioned in 1957, and was expanded in 1964, 1973, and 1990. It has a surface
22 area of 126 acres and a dam height of 126 feet and is used to store bottom ash and fly
23 ash, and will store gypsum in the future. The Brown ash treatment basin is currently

1 being expanded, the costs of which are included in KU's 2005 Plan⁶ as Project 20.
2 The auxiliary ash treatment basin was constructed in 2008, has a surface area of 35
3 acres and a dam height of 70 feet. The auxiliary ATB stores bottom and fly ash. KU
4 constructed the auxiliary ash treatment basin as part of Project 20 of the 2005 Plan.

5 **Q. Please describe the current status of KU's CCP storage facilities at its Ghent**
6 **generating station.**

7 A. KU constructed two ash treatment basins at its Ghent generating station, one of which
8 is still operational. Ash treatment basin 1 was constructed in 1972, has a surface area
9 of 125 acres, and a dam height of 52 feet. KU stored bottom ash and fly ash in ash
10 treatment basin 1; the ash treatment basin 1 is no longer accepting new material and
11 serves as a catch basin for water overflow. Ash treatment basin 2 was constructed in
12 1995 and expanded in 2003; it has a surface area of 146 acres and a dam height of
13 175 feet. KU stores bottom ash and fly ash in ash treatment basin 2.

14 **Q. Please describe the current status of KU's CCP storage facility at its Green**
15 **River generating station.**

16 A. KU operates an ash treatment basin at its Green River generating station, which was
17 most recently expanded in 1977, has a surface area of 37 acres and a dam height of 54
18 feet. KU stores bottom ash and fly ash in the Green River ash treatment basin.

⁶ In the Matter of: *The Application of Kentucky Utilities Company for a Certificate of Public Convenience and Necessity to Construct Flue Gas Desulfurization Systems and Approval of Its 2004 Compliance Plan for Recovery by Environmental Surcharge* (Case No. 2004-00426).

1 **Q. Please describe the current status of KU's CCP storage facility at its Tyrone**
2 **generating station.**

3 A. KU operates an ash treatment basin at its Tyrone generating station, which was most
4 recently expanded in 1977. The Tyrone ash treatment basin has a surface are of 13
5 acres and a dam height of 16 feet.

6 **Q. Please describe the current status of the CCP storage facilities at the Trimble**
7 **County generating station.**

8 A. The Companies operate an ash treatment basin at its Trimble County generating
9 station, which was constructed in 1991, has a surface area of 82 acres and a dam
10 height of 40 feet. The Companies store bottom ash, fly ash, and gypsum fines in the
11 Trimble County ash treatment basin.

12 **Q. What is the remaining storage capacity of KU's CCP storage facilities?**

13 A. KU's assessment of remaining useful storage at the facilities described above is
14 presented more comprehensively in Mr. Voyles's testimony; however, based on
15 current estimates of generation requirements, coal qualities, and resulting CCP
16 production, KU estimates that the current phase of the Brown ash treatment basin
17 expansion project will be completely filled by 2012, the ash treatment basin 2 at
18 Ghent will reach its maximum desired capacity by 2012 (and available gypsum
19 storage will be filled by 2012), and the ash treatment basin (as it currently exists) at
20 Trimble County will reach its maximum desired capacity by 2010. These dates
21 assume that no new significant cost-effective CCP beneficial reuse opportunities
22 arise, though the Companies will pursue every cost-effective and otherwise prudent
23 opportunity that arises.

1 With respect to Green River, KU estimates that with beneficial reuse the
2 station has approximately 19 years of capacity remaining. Tyrone's storage capacity
3 is indefinite given the operating status of the unit.

4 **Q. What are KU's plans for CCP storage at Brown, Ghent and Trimble County?**

5 A. KU's plans are described in more detail in Mr. Voyles's testimony. At Brown, KU is
6 planning to construct Phase II of the ash treatment basin project. Phase I of this
7 project was included in KU's 2005 Plan as Project 20. For Ghent, KU is pursuing a
8 beneficial reuse opportunity with Trans Ash, as further discussed below, while
9 permitting and constructing a new landfill. Furthermore, the Companies are planning
10 to expand its existing Trimble County ash treatment basin and activate its
11 constructed, but unused, gypsum storage pond in 2010. KU anticipates that these two
12 steps will provide additional CCP storage until 2013, which provides adequate time to
13 construct a new landfill on the Trimble County property.

14 *Beneficial Reuse Opportunities*

15 **Q. What are "beneficial reuse opportunities" and why are the Companies interested**
16 **in them?**

17 A. "Beneficial reuse opportunities" refers to opportunities the Companies have to
18 transport CCP off-site for reuse in an unrelated manufacturing process or construction
19 project. For example, both LG&E and KU have agreements, and have had
20 agreements for several years, for wallboard manufacturers to use gypsum produced at
21 LG&E's Trimble County facility and KU's Ghent facility in the manufacture of
22 wallboard.

1 When such opportunities are determined to be cost effective they can be
2 beneficial for the Companies and their customers, and environmentally sound.
3 Construction and operation of landfills and ash treatment basins are significant
4 investments and commitments. If the Companies are able to take advantage of
5 prudent beneficial reuse opportunities as they arise, they can reduce the rate of CCP
6 material going into on-site storage facilities, thereby extending the lives of their CCP
7 storage facilities. The Companies are therefore actively seeking such alternatives to
8 reduce the volume of on-site storage that is required to continue operating their
9 generating facilities.

10 **Q. Why are the Companies now seeking recovery of beneficial reuse opportunities**
11 **through the ECR?**

12 A. The Companies are proposing significant capital investments in CCP storage facilities
13 in this proceeding. Beneficial reuse remains an alternative to these storage projects.
14 The rate treatment of the CCP storage facilities projects and the beneficial reuse
15 opportunities should be consistent to avoid any economic bias toward one project
16 type. When the economic evaluation of CCP projects is consistent, including both
17 capital investment and beneficial reuse, customers will ultimately benefit through the
18 lowest cost combination of long-term CCP management options.

19 **Q. Are there any beneficial reuse opportunities KU is actively pursuing?**

20 A. Yes. In terms of new beneficial reuse opportunities, KU has been approached by a
21 construction contractor about using gypsum from the Ghent station as a fill material
22 for a local area development opportunity. Based on the Company's economic
23 evaluations, as discussed in Mr. Schram's testimony, this beneficial reuse opportunity

1 has the potential to divert, for the next 3 years, up to 1.5 million tons of gypsum per
2 year.

3 KU (and LG&E) have been approached by a cement manufacturer located in
4 St. Louis, Missouri, about using ash from the Trimble County station as a raw
5 material for cement production. Based on the Company's economic evaluations, as
6 discussed in Mr. Schram's testimony, this beneficial reuse opportunity has the
7 potential to divert, over the next 20 years, up to 95% of the fly ash produced at the
8 Trimble County generating facility. Up to 350,000 tons per year for a total potential
9 of up to 6.5 million tons of ash will be diverted from permanent on-site storage,
10 thereby delaying the next phase of the landfill by an estimated 8 years.

11 **Q. What is the determining criterion for evaluating the cost-effectiveness of**
12 **beneficial reuse?**

13 A. Mr. Schram's testimony describes the evaluation process KU follows when
14 determining whether a beneficial reuse opportunity is a cost-effective means of
15 managing CCP. Generally, the Company determines that a beneficial reuse
16 opportunity is cost effective and should be pursued when the incremental costs
17 associated with the reuse lowers the present value of revenue requirements ("PVR")
18 of building and operating future phases of on-site storage.

19 **Q. What has changed about the beneficial reuse market that makes Project 33 in**
20 **KU's 2009 Plan advantageous to KU and its customers?**

21 A. Increasingly, beneficial reuse opportunities are available for relatively short periods
22 of time and for varying amounts of CCP. For example, an opportunity to reuse CCP
23 as structural fill will only be available as long as the particular project is in the

1 structural fill phase of construction. Even so, some of these opportunities may be
2 cost-effective, and therefore beneficial to KU and its customers. To be ready to avail
3 itself of such opportunities, KU has an efficient beneficial reuse evaluation and
4 recommendation process, as many utilities are seeking to reuse CCP. KU is therefore
5 requesting Commission approval for ECR cost recovery through Project 33 for the
6 cost of such arrangements when the Company determines they are cost-effective and
7 demonstrates such as described below. This will allow KU to maximize its use of
8 cost-effective beneficial reuse for the ultimate benefit of its customers.

9 **Q. How would KU include beneficial reuse opportunities in its Compliance Plan**
10 **and in the ECR?**

11 A. When KU's evaluation determines that a beneficial reuse opportunity is cost effective
12 using the general criteria described above and the detailed evaluation methods Mr.
13 Schram describes, KU proposes to include the current monthly costs associated with
14 such a beneficial reuse opportunity in its ECR filing forms. (The testimony of Mr.
15 Conroy presents the changes to the ECR filing forms associated with Project 33.)
16 This would allow KU to inform the Commission of the cost-effective beneficial reuse
17 opportunities the Company is pursuing in nearly real-time and provide the necessary
18 information for the Commission's continuing oversight of this activity. The six-
19 month and two-year reviews would provide further oversight and review of the cost-
20 effectiveness of each beneficial use project.

1 **Return on Equity**

2 **Q. What return on common equity is KU currently authorized in its ECR tariff?**

3 A. KU is currently authorized a return on equity ("ROE") of 10.63 percent per the
4 Commission's February 5, 2009 Order in Case No. 2008-00251.

5 **Q. What ROE is KU requesting in this proceeding?**

6 A. The Company is requesting a continuation of the 10.63 percent ROE authorized in
7 Case No. 2008-00251. This ROE is the result of settlement negotiations and has been
8 in effect since February 2009. KU believes that, although a higher ROE could be
9 justified under current economic conditions, the use of the 10.63% ROE is a
10 straightforward approach, consistent with the settlement agreement approved by the
11 Commission in KU's most recent base rate case, and eliminates the controversy often
12 associated with this issue.

13 **Q. How does KU propose to recover the cost of the pollution control projects in its
14 2009 Plan?**

15 A. KU proposes to recover the cost of the pollution control projects in its 2009 Plan
16 through KU's Electric Rate Schedule ECR filed with this application and proposed to
17 be effective for bills rendered in the first cycle of the February 2010 billing month.
18 The testimony of Mr. Conroy explains how the surcharge for the 2009 Plan will be
19 calculated and billed under KU's proposed revised ECR Tariff. Mr. Conroy's
20 testimony explains the reasons for the proposed changes in the terms of Electric Rate
21 Schedule ECR and affirms that the calculation will be consistent with the methods
22 and methodologies previously approved by the Commission. Also, Mr. Conroy's
23 testimony discusses changes to KU's monthly ECR filing forms.

1 **Q. What action should the Commission take regarding this application?**

2 A. The Commission should grant KU a CPCN to construct an SCR at its Brown Unit 3, a
3 CPCN to construct a landfill at the Ghent generating station, and a CPCN to construct
4 a landfill (to be jointly owned with LG&E) at the Trimble County generating station.
5 Further, the Commission should approve KU's 2009 Plan and application for cost
6 recovery of its compliance costs through its Electric Rate Schedule ECR tariff and the
7 proposed changes to its monthly filing forms beginning with the expense month of
8 December 2009 for bills rendered on and after January 28, 2010.

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

10 A. Yes, it does.

VERIFICATION

COMMONWEALTH OF KENTUCKY)
) **SS:**
COUNTY OF JEFFERSON)

The undersigned, **Lonnie E. Bellar**, being duly sworn, deposes and says he is Vice President, State Regulation and Rates for Kentucky Utilities Company and an employee of E.ON U.S. Services, Inc., and that 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 24th day of June 2009.

Sammy J. Ely

Notary Public (SEAL)

My Commission Expires:

November 9, 2010

APPENDIX A

Lonnie E. Bellar

E.ON U.S. Services Inc.
220 West Main Street
Louisville, Kentucky 40202

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

E.ON U.S.

| | |
|--|-------------------------|
| Vice President, State Regulation and Rates | Aug. 2007 – Present |
| 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

Civic Activities

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



COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF KENTUCKY UTILITIES)
COMPANY FOR A CERTIFICATE OF PUBLIC)
CONVENIENCE AND NECESSITY AND) **CASE NO. 2009-00197**
APPROVAL OF ITS 2009 COMPLIANCE PLAN)
FOR RECOVERY BY ENVIRONMENTAL)
SURCHARGE)

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

Filed: June 26, 2009

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

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

8 **Q. Please describe your job responsibilities.**

9 A. I have 33 years of experience in the utility industry. In addition to oversight of the
10 Transmission system, my current responsibilities include support of the generating
11 fleet for both companies with engineering services and environmental compliance
12 departments. I am also responsible for project engineering, the department that
13 oversees large construction projects including generating stations, pollution control
14 equipment and on-site byproduct storage facilities. Prior to this assignment, I was the
15 officer responsible for the generating fleet and earlier in my career; I served as the
16 corporate environmental director.

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

18 A. Yes. Most recently, I have testified in Case No. 2004-00507¹ and Administrative
19 Case 2007-00300². Prior to those cases, I testified in LG&E’s original application for
20 recovery of its 1995 Environmental Compliance Plan.³

¹ *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

² *In the Matter of:* Consideration of the Requirements of the Federal Energy Policy Act of 2005 Regarding Fuel Sources and Fossil Fuel Generation.

³ *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

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

2 A. Yes. I am sponsoring the following fourteen (14) exhibits:

3 **Exhibit JNV-1** Kentucky Utilities Company's 2009 Environmental
4 Compliance Plan

5 **Exhibit JNV-2** *Comprehensive Strategy for Management of Coal Combustion*
6 *Byproducts for E.ON U.S. Subsidiaries Kentucky Utilities and*
7 *Louisville Gas and Electric (June 2009)*

8 **Exhibit JNV-3** E.W. Brown Station KPDES Permit – KY0002020

9 **Exhibit JNV-4** E.W. Brown Station Dam Construction Permits – 15956 and
10 16906

11 **Exhibit JNV-5** Trimble County Station KPDES Permit – KY0041971

12 **Exhibit JNV-6** Trimble County Station Dam Construction Permit – 17503

13 **Exhibit JNV-7** Trimble County Station Special Waste Landfill Permit -112-
14 00003

15 **Exhibit JNV-8** *FMSM-Confidential Revised Conceptual Design Report E.W.*
16 *Brown Ash Treatment Basin Extension (September 6, 2005)*

17 **Exhibit JNV-9** *FMSM-Confidential Preliminary Design Report E.W. Brown*
18 *Ash Treatment Basin Extension (February 17, 2006)*

19 **Exhibit JNV-10** *GAI Consultants, Incorporated's- Preliminary Draft Report*
20 *Ghent Ash Pond and Landfill Project Final Conceptual Design*
21 *for Storage of Coal Combustion Products Volumes 1 and 2*
22 *(April 2009)*

23 *GAI Consultants, Incorporated's- Ghent Ash Pond and Landfill*
24 *Project Initial Siting Study for Storage of Coal Combustion*
25 *Products (November 2007)*

26 **Exhibit JNV-11** *MACTEC Engineering and Consulting, Incorporated's-*
27 *Modification of Bottom Ash Pond Trimble County Generating*
28 *Station (November 10, 2006)*

29 **Exhibit JNV-12** *MACTEC Engineering and Consulting, Incorporated's- Final*
30 *Report on Preliminary Conceptual Design For Landfill*
31 *Storage of CCP Materials – Trimble County Generating*
32 *Station (June 17, 2009)*

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

Exhibit JNV-13 Kentucky Utilities Consent Decree with U.S. EPA (March 2009)

Exhibit JNV-14 E.W. Brown Station Title V Air Permit

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to describe the proposed pollution control projects contained in KU's 2009 Environmental Compliance Plan ("2009 Plan"), identify the environmental requirements which cause the need for the pollution control facilities in KU's 2009 Plan, describe the various obligations imposed on KU by current local, state, and federal environmental laws and regulations which cause the need for the environmental protection projects set forth in the 2009 Plan, and present the Companies' *Comprehensive Strategy for Management of Coal Combustion Byproducts for E.ON U.S. Subsidiaries Kentucky Utilities and Louisville Gas and Electric* (Exhibit JNV-2). ("CCP Strategy") The 2009 Plan is attached as Exhibit JNV-1 to my testimony and sets forth each new pollution control project for which KU is seeking environmental surcharge recovery. These projects are required to comply with the Clean Air Act as amended, the Clean Air Interstate Rule ("CAIR"), Clean Water Act, the Resource Conservation and Recovery Act, the U.S. Environmental Protection Agency ("EPA") consent decree in regards to Brown Unit 3, KRS Chapter 151, Section 401 KAR Chapters 5, 9, 10, 45, and other environmental requirements that apply to KU facilities used in the production of energy from coal. I will be presenting the need for the proposed projects and will provide project details including a description of the proposed projects, the timeframe for construction, and the estimated cost of the projects.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

PROJECT OVERVIEW AND DESCRIPTION

Q. Please provide an overview of the projects in KU's 2009 Environmental Compliance Plan.

A. The six projects contained on Page 1 of Exhibit JNV-1 and identified as KU Projects 28 through 33, are required in order for KU to comply with the Clean Air Act, Clean Water Act, the Resource Conservation and Recovery Act, CAIR and other environmental regulations applicable to KU power plants. The total capital cost of the new projects in the 2009 Plan is estimated to be approximately \$462.55 million. KU is also seeking recovery of operating and maintenance expenses associated with Projects 28, 30, 32 and 33, as detailed on Page 2 of Exhibit JNV-1.

Additionally, KU is seeking inclusion of the incremental operating and maintenance expenses associated with Project 23 in its 2006 Plan, namely, the Air Quality Control Systems ("AQCS") being installed on Trimble County Unit 2 ("Trimble 2") (see Page 2 of Exhibit JNV-1). In order to remain in compliance with its Title V Operating Permit, KU must operate and maintain the AQCS in accordance with the requirements of the Clean Air Act and CAIR.

Q. Please describe KU's 2009 Environmental Compliance Plan as shown in Exhibit JNV-1.

A. The new pollution control projects in KU's Environmental Compliance Plan are shown in Exhibit JNV-1. Page 1 of Exhibit JNV-1 lists the capital costs associated with KU's compliance plan.

1 **Column 1** assigns a number to each project for identification purposes in sequence
2 with the projects from Case No. 93-465⁴ (1 through 15), Case No. 2000-
3 439⁵ (16 and 17), Case No. 2002-00146⁶ (18), Case No. 2004-00426⁷ (19
4 through 22) and Case No. 2006-00206⁸ (23 through 27).

5 **Column 2** describes the air pollutant or byproduct to be controlled.

6 **Column 3** identifies the pollution control facility that KU plans to upgrade/construct
7 to comply with the environmental regulations identified in Column 5 or
8 lists “Beneficial Reuse” for all beneficial reuse projects.

9 **Column 4** identifies the specific location of the pollution control facility, or states
10 “All Stations” for beneficial reuse projects with operation and
11 maintenance expenses only.

12 **Column 5** identifies the environmental regulation that requires KU to act on the
13 associated project.

14 **Column 6** identifies the environmental permit required for KU’s projects to satisfy
15 the environmental regulations.

16 **Column 7** shows anticipated completion date of the specific project or “on-going” for
17 beneficial reuse projects.

18 **Column 8** displays the estimated capital cost of the project.

⁴ In the Matter of: *The Application of Kentucky Utilities Company to Assess a Surcharge Under KRS 278.183 to Recover Cost of Compliance with Environmental Requirements for Coal Combustion Wastes and By-Products*

⁵ In the Matter of: *The Application of Kentucky Utilities Company for Approval of an Amended Compliance Plan for Purposes of Recovering the Costs of New and Additional Pollution Control Facilities and to Amend Its Environmental Surcharge Tariff*

⁶ In the Matter of: *The Application of Kentucky Utilities Company for Approval of Its 2002 Compliance Plan for Recovery by Environmental Surcharges*

⁷ In the Matter of: *The Application of Kentucky Utilities Company for a Certificate of Public Convenience and Necessity to Construct Flue Gas Desulfurization Systems and Approval of its 2004 Compliance Plan for Recovery by Environmental Surcharge*

⁸ In the Matter of *The Application of Kentucky Utilities Company for a Certificate of Public Convenience and Necessity to Construct Selective Catalytic Reduction Systems and Approval of its 2006 Compliance Plan for Recovery by Environmental Surcharge*

1 Page 2 of Exhibit JNV-1 lists the expected annual incremental operations and
2 maintenance expenses associated with each project.

3 **Column 1** assigns a number to each project for identification purposes in sequence
4 with the projects from Case No. 93-465 (1 through 15), Case No. 2000-
5 439 (16 and 17), Case No. 2002-00146 (18), Case No. 2004-00426 (19
6 through 22) and Case No. 2006-00206 (23 through 27).

7 **Column 2** describes the air pollutant or byproduct to be controlled.

8 **Column 3** identifies the pollution control facility that KU plans to upgrade/construct
9 to comply with the environmental regulations.

10 **Column 4** identifies the specific location of the pollution control facility, or beneficial
11 reuse.

12 **Columns 5-13** identify the incremental operation and maintenance costs associated
13 with each project (through 2018).

14 **ENVIRONMENTAL REGULATION**
15

16 **Q. Please describe environmental regulation as it exists today.**

17 A. Environmental compliance is and always has been an ongoing, everyday activity at
18 our facilities and for our operations. The passage of the initial Clean Air Act, the
19 Clean Water Act, and the Resource Conservation and Recovery Act, and all
20 subsequent amendments to and revisions of these and other environmental laws and
21 regulations have increased KU's environmental compliance obligations over time.
22 There is a need for continuous investment in and maintenance of environmental
23 pollution control equipment and facilities. The stringent environmental regulations
24 that have caused the need for the pollution control projects in KU's 2009 Plan relate

1 to the protection of air and water quality and the proper management of coal
2 combustion byproducts ("CCP").

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

5 A. Under the Clean Air Act, KU is regulated by federal and state agencies. The EPA has
6 granted the state of Kentucky primacy for implementing the provisions of the Clean
7 Air Act through the State Implementation Plan process. All of the KU coal-fired
8 units in Kentucky fall under the jurisdiction of the Kentucky Energy and Environment
9 Cabinet, Division for Air Quality and must comply with regulations promulgated by
10 the state agency. Primacy for implementation and enforcement of the Clean Water
11 Act and the Resource Conservation and Recovery Act have also been granted to
12 Kentucky. The Kentucky Division of Water and the Kentucky Division of Waste
13 Management manage the water and waste management issues for the Cabinet,
14 respectively.

15 KU has four coal-fired units located in Carroll County, Kentucky, three coal-
16 fired and seven natural gas-fired units in Mercer County, Kentucky, two coal-fired
17 units in Muhlenberg County, Kentucky and one coal-fired unit located in Woodford
18 County, Kentucky. A coal-fired unit, which KU owns jointly with LG&E, is
19 currently under construction in Trimble County and is expected to be completed in
20 2010.

21 **Q. Does KU's 2009 Plan list the environmental permits and regulations that are**
22 **applicable to KU?**

23 A. Yes. My testimony describes the environmental regulations, permit requirements and
24 compliance orders applicable to KU. These regulations and requirements are

1 summarized in Column 5 in Exhibit JNV-1. The pollution control facilities listed as
2 Projects 28-33 of KU's 2009 Plan enable the Company to continue to fulfill its
3 environmental compliance obligations. The evidence of KU's satisfaction of its
4 environmental compliance obligation and thus the need for the projects in the 2009
5 Plan is shown in Column 6, "Environmental Permits" in Exhibit JNV-1.

6
7 **Projects 29, 30, 31 and 32 – Coal Combustion Byproduct Treatment Facilities**

8
9 **Q. Please identify those byproducts produced during the combustion of coal to**
10 **produce electricity that KU is controlling with the projects included in the 2009**
11 **Plan.**

12 A. The combustion of coal generates various byproducts which are characterized as
13 special wastes (non-hazardous, high volume wastes) in the form of fly ash and bottom
14 ash, as well as gypsum (calcium sulfate) from the flue gas desulfurization systems
15 ("FGDs"), which are currently deposited into either permitted ash treatment basins or
16 gypsum storage facilities, or as appropriate, beneficially reused.

17 **Q. Has EPA studied these special wastes and made any determinations as to the**
18 **hazardous nature of CCP?**

19 A. EPA has conducted two separate studies, reaching a conclusion in 1993 and again in
20 2000 that CCP did not warrant regulation as a hazardous waste.

21 **Q. What environmental laws and regulations are applicable to the protection of**
22 **water quality and control of coal combustion byproducts?**

23 A. Storage of coal combustion byproducts is regulated under both the Clean Water Act
24 and the Resource Conservation and Recovery Act. Primacy for implementation and
25 enforcement of these Federal environmental statutes has been granted to Kentucky.

1 The coal-fired units in Kentucky are under the jurisdiction of the Kentucky Energy
2 and Environment Cabinet and must comply with regulations promulgated by the state
3 agency. The Division of Water and the Division of Waste Management manage the
4 water and waste management issues for the Cabinet, respectively.

5 KU has operated ash treatment basins at the Brown and Ghent stations for as
6 long as the units have been in service. Under current operations, fly ash and bottom
7 ash are sluiced with water to these above-ground surface impoundments where the
8 ash settles out and the decanted water is returned back to surface waters as a point
9 source discharge. Ghent also operates a gypsum storage facility in a similar manner.
10 After the completion of the new FGD unit at Brown, gypsum will also be placed in
11 the Brown ash treatment basin for long term storage. These point source discharges
12 are permitted by the Division of Water through the Kentucky Pollutant Discharge
13 Elimination System ("KPDES") program regulations found in 401 KAR 5. The
14 Division of Water program establishes water quality standards (at 401 KAR 5:031)
15 for the protection of aquatic life, drinking water and primary and secondary contact
16 recreation. The discharge from ash treatment basins must meet these water quality
17 standards which are translated into effluent limitations (limits on the concentration
18 and mass of pollutants returned to surface waters) by the Division of Water. The
19 Division of Water program also requires a demonstration of compliance with effluent
20 limitations through discharge monitoring and monthly reporting.

21 The Division of Waste Management regulates utility wastes under their
22 special waste management regulatory program (401 KAR Chapter 45). Fly ash,
23 bottom ash, and gypsum, which are managed in a surface impoundment permitted
24 under the Division of Water's KPDES program, are granted a special waste permit-

1 by-rule by the Division of Waste Management. Utilities that manage wastes on a dry
2 basis are required to obtain a special waste landfill permit from the Division of Waste
3 Management. Since the Brown and Ghent ash treatment basins operate as surface
4 impoundments with a KPDES permit, the Division of Waste Management considers
5 them permit-by-rule facilities under the special waste regulations.

6
7 **Project 29 -- Brown Station Ash Treatment Basin**
8

9 **Q. Why is it necessary to modify the existing ash treatment basins at the Brown**
10 **Station (Project 29)?**

11 A. As previously mentioned in KU's 2005 ECR Plan, the original ash treatment basin
12 was nearing capacity such that inadequate settling volume remained. Thus,
13 inadequate retention time in the ash treatment basin had diminished its treatment
14 capability. An auxiliary ash treatment basin was constructed in order to temporarily
15 close the original ash treatment basin for dewatering. After dewatering, a liner will
16 be placed on top of the existing (dried) pond before raising the dam height of the ash
17 treatment basin as called for in the project. The project also calls for raising the dam
18 walls of the auxiliary pond to their final permitted height in order to increase long
19 term storage capacity.

20 **Q. Is this expansion necessary in order to comply with environmental regulations or**
21 **permits?**

22 A. Yes, the special waste byproducts from the combustion of coal must be deposited in
23 the ash treatment basins in accordance with the Brown Station KPDES permit
24 KY0002020, identified as Exhibit JNV-3 on the compact disc included with this
25 testimony. This permit, effective on February 1, 2002, was due to expire on January

1 31, 2007 but remains active and in force (consistent with Division of Water
2 Regulation 401 KAR 5:060) due to the renewal application submitted by KU to
3 Division of Water on August 14, 2006. The letter from the Division of Water staff
4 indicating the official date of the complete application and thus the permit extension
5 is identified as Exhibit JNV-4 on the compact disc included with this testimony. The
6 KPDES renewal application seeks a revision to the permit to include gypsum in the
7 permitted materials stored in the ash treatment basins. The planned expansion of the
8 ash treatment basins will allow the Brown facility to continue meeting the
9 requirements of this permit.

10 **Project 30 -- Ghent Station Landfill**

11 **Q. Why is it necessary to construct a new landfill at the Ghent Station (Project 30)?**

12 A. The original storage impoundments at Ghent (two ash treatment basins and two
13 gypsum storage facilities) are nearing capacity and new storage capacity must be
14 constructed in order to continue operation of the plant. KU has met with Division of
15 Waste Management staff on several occasions over the last 12 months to discuss
16 permitting issues for the proposed landfill at Ghent and received favorable feedback
17 on the preliminary designs. On the basis of KU's past experience with the Division
18 of Waste Management's permitting processes, the applicable regulations, and the
19 positive feedback from the agency staff, the Company anticipates a favorable
20 disposition of KU's permit application. Similar discussions and preliminary field
21 reviews have also been held with the U.S. Army Corps of Engineers ("Corps") for the
22 Clean Water Act 404 permit and with Division of Water staff for the Clean Water Act
23 401 Water Quality Certification, both of which require mitigation for the taking of
24 streams within the proposed landfill footprint. Favorable disposition of these two

1 permit applications is also anticipated. After final engineering design work is
2 completed this fall, the landfill, 404 and 401 permit applications will be submitted to
3 the Division of Waste Management, the Corps and the Division of Water respectively
4 and copies will be provided to the Commission.

5 **Q. Are there any air regulations which would need to be considered in the**
6 **operation of a new landfill at the Ghent Station?**

7 A. Yes. New landfill operations will cause an increase in particulate emissions, which if
8 not properly controlled, could have an adverse impact on the environment. The
9 increase in particulate emissions associated with the new landfill is regulated under
10 401 KAR 51:017, Prevention of Significant Deterioration of Air Quality. The control
11 of fugitive dust from landfill operations is regulated under 401 KAR 63:010, Fugitive
12 Emissions. The permitting of new particulate emission sources associated with the
13 landfill is regulated under 401 KAR 52:020.

14 **Q. What are the requirements associated with these air regulations?**

15 A. The 401 KAR 52:020 regulation requires the station to revise its Title V air operating
16 permit whenever there is new emission source added at the facility. New emission
17 sources include the new CCP material handling conveyors, CCP loading/unloading
18 and CCP landfill dozer operations. These new process operations will be added to the
19 existing Title V permit and, as a result, additional regulatory requirements associated
20 with these activities could be required and added to the Title V permit.

21 The 401 KAR 63:010 regulation has several requirements associated with
22 minimizing fugitive dust and prohibiting any visible particulate emissions off-site.
23 The new landfill design and operation will require specific efforts to comply with this
24 regulation.

1 The 401 KAR 51:017 regulation requires that a Prevention of Significant
2 Deterioration permit application be submitted whenever there is a significant increase
3 in emissions such as particulates. When Prevention of Significant Deterioration is
4 triggered, the increase in particulate emissions consumes a portion of a maximum
5 allowable air quality increment for particulates. In addition, a Prevention of
6 Significant Deterioration permit requires the new process to install Best Available
7 Control Technology (“BACT”).

8 **Q. Have any of these air quality regulations impacted the design of the proposed**
9 **new Ghent landfill?**

10 A. Yes. Ash transport from the generator site to the landfill can be accomplished in two
11 ways, either by truck hauling or by automated conveyance systems. Using trucks
12 raised the likelihood of increasing particulate emissions to a level that would trigger
13 the requirement for a Prevention of Significant Deterioration permit. BACT for
14 moving significant quantities of CCP material would be by conveyor, either pipe or
15 enclosed, instead of truck hauling. In addition, since truck hauling designs would
16 have required the haul roads to be located near the property boundaries, it would be
17 impractical to avoid visible particulate emissions off the property. The proposed
18 landfill design includes plans to use conveyors and is not anticipated to trigger a
19 Prevention of Significant Deterioration application.

20 **Project 31 – Trimble County Station**
21 **Ash Treatment Basin and Gypsum Storage Pond**

22 **Q. Why is it necessary to modify the existing ash treatment basin at the Trimble**
23 **County Station (Project 31)?**

1 A. The original ash treatment basin is nearing maximum desired capacity. The project
2 calls for the raising of the dam height of the existing ash treatment basin as well as
3 lining the previously unused emergency pond and converting it to a gypsum storage
4 pond in order to increase overall storage capacity on-site. Upon completion of
5 Trimble 2, KU will become a part owner of the existing ash treatment basin, and
6 therefore, the expansion of the existing facility is included in both KU's and LG&E's
7 2009 Plans.

8 **Q. Is this expansion necessary in order to comply with environmental regulations or**
9 **permits?**

10 A. Yes, the byproducts from the combustion of coal that are not beneficially reused must
11 be deposited in the facility's ash treatment basins in accordance with the Trimble
12 County Station KPDES permit KY0041971, identified as Exhibit JNV-5 on the
13 compact disc included with this testimony. This permit, effective on October 1, 2002,
14 was due to expire on September 30, 2007 but remains active and in force (consistent
15 with Division of Water Regulation 401 KAR 5:060) because the renewal application
16 was submitted to Division of Water on April 11, 2007. The letter from Division of
17 Water staff indicating the official date of the complete application and thus the permit
18 extension is identified as Exhibit JNV-6 on the compact disc included with this
19 testimony. The KPDES renewal application accounts for the addition of the new
20 gypsum storage pond. The planned expansion of the ash treatment basin and creation
21 of the new gypsum storage pond will allow the Trimble County facility to continue
22 meeting the requirements of this permit.

23

1 **Project 32 – Trimble County Station Landfill**

2 **Q. Why is it necessary to construct new storage capability at the Trimble County**
3 **Station (Project 32)?**

4 A. The original storage impoundment is nearing capacity and new storage capacity must
5 be constructed in order to continue operation of the plant. Project 31 will increase the
6 current capacity of the ash treatment basin for a short period of time which will allow
7 the design, permitting and Phase I construction of Project 32 to be completed in time
8 to meet the facility's storage needs. During the construction of Trimble 1 in the late
9 1980's, the facility applied for and received an inert landfill permit from the Division
10 of Waste Management which was subsequently converted to a special waste landfill
11 permit in 1996 (effective back to 1992) as a result of Kentucky regulatory changes. A
12 copy of the current permit is identified as Exhibit JNV-7 on the compact disc
13 included with this testimony. Even though the landfill was permitted, it was never
14 constructed because LG&E was able to successfully transport gypsum off-site for
15 beneficial reuse in the wallboard manufacturing process. However, with the addition
16 of Trimble 2 in 2010, the plan for additional CCP storage was reexamined with both
17 ash treatment basins and landfills considered as CCP storage options. After an
18 engineering review, separate ash treatment and gypsum storage facilities were
19 determined to be the best option for additional CCP storage and further engineering
20 studies were initiated. In December 2008, EPA rejected a request to recycle ash
21 sluice waters as make-up water in the Trimble 2 FGD, thus creating a water balance
22 problem for the station if fly ash was transported and stored wet in a newly
23 constructed ash treatment basin. As a result of the EPA decision, the Company

1 decided in January 2009 to switch from ash treatment basins to dry landfills as the
2 storage method of choice, and the entire engineering process was started over.

3 Project 32 will require an application to the Division of Waste Management
4 for a modification of the existing permit during which the plans will be updated to
5 current engineering and environmental standards. Trimble County has received
6 favorable feedback on the preliminary landfill designs during meetings with Division
7 of Waste Management staff and a favorable disposition of the permit modification is
8 anticipated. Similar discussions and preliminary field reviews have been conducted
9 with the Corps for the Clean Water Act 404 permit and with Division of Water staff
10 for the Clean Water Act 401 Water Quality Certification, both of which require
11 mitigation for the taking of streams within the proposed landfill footprint. Favorable
12 disposition of these two permit applications is also anticipated. After final
13 engineering design work is completed this fall, the landfill, 404 and 401 permit
14 applications will be submitted to the Division of Waste Management, the Corps and
15 the Division of Water respectively and copies will be provided to the Commission.

16 **Q. Are there any air regulations which would need to be considered in the**
17 **operation of a new landfill at the Trimble County Station?**

18 A. Yes. The new landfill operations will cause an increase in particulate emissions,
19 which if not properly controlled, could have an adverse impact on the environment.
20 The increase in particulate emissions associated with the new landfill is regulated
21 under 401 KAR 51:017, Prevention of Significant Deterioration of Air Quality. The
22 control of fugitive dust from landfill operations is regulated under 401 KAR 63:010,
23 Fugitive Emissions. The permitting of new particulate emission sources associated
24 with the landfill is regulated under 401 KAR 52:020.

1 **Q. What are the requirements associated with these air regulations?**

2 A. The 401 KAR 52:020 regulation requires the station to revise its Title V air operating
3 permit whenever there is new emission source added at the facility. This will include
4 the new CCP material handling conveyors, CCP loading/unloading and CCP landfill
5 dozer operations. These new process operations will be added to the existing Title V
6 permit and potentially additional regulatory requirements associated with these
7 activities could be required and also be added to the Title V permit.

8 The 401 KAR 63:010 regulation has several requirements associated with
9 minimizing fugitive dust and prohibiting any visible particulate emissions off-site.
10 The new landfill design and operation will require specific efforts to comply with this
11 regulation.

12 The 401 KAR 51:017 regulation requires a Prevention of Significant
13 Deterioration permit application be submitted whenever there is a significant increase
14 in emissions such as particulates. When Prevention of Significant Deterioration is
15 triggered, the increase in particulate emissions consumes a portion of a maximum
16 allowable air quality increment for particulates. In addition, a Prevention of
17 Significant Deterioration permit requires the new process to install BACT.

18 **Q. Have any of these air quality regulations impacted the design of the proposed**
19 **new Trimble County landfill?**

20 A. Yes. Ash transport from the generator site to the landfill can be accomplished in two
21 ways, either by truck hauling or by automated conveyance systems. Using trucks
22 raised the likelihood of increasing particulate emissions to a level that would trigger
23 the requirement for a Prevention of Significant Deterioration permit. BACT for
24 moving significant quantities of CCP material would be conveyors, either pipe or

1 enclosed, instead of truck hauling. Trimble County is an existing Prevention of
2 Significant Deterioration source for both Trimble 1 and Trimble 2, which means that
3 the construction on both of these units consumed Prevention of Significant
4 Deterioration increment. Based on the modeling performed in conjunction with
5 Trimble 2 Prevention of Significant Deterioration permitting, little, if any, particulate
6 increment is remaining on the eastern and southern sides of the existing property.

7 In addition to the Prevention of Significant Deterioration increment concern,
8 since truck hauling designs would have required the haul road to travel across a
9 highway, it would be impractical to avoid visible particulate emissions off the
10 property. The proposed landfill design includes plans to use conveyors and is not
11 anticipated to trigger a Prevention of Significant Deterioration application.

12 **Project 33 – Beneficial Reuse**

13 **Q. Are there environmental regulations governing the beneficial reuse of coal
14 combustion byproducts?**

15 A. Yes. KU will comply with the performance standards and requirements of the special
16 waste and beneficial reuse regulations found in 401 KAR 45 for all CCP projects.

17 **COAL COMBUSTION BYPRODUCT MANAGEMENT STRATEGY**

18 **Q. Please summarize the Companies' strategy for managing coal combustion
19 byproducts ("CCP").**

20 A. The Companies have over 50 years of experience in the operation and maintenance of
21 landfills and impoundments. With seven coal-fired generation facilities
22 (approximately 95% of the Companies annual energy production is sourced from
23 coal), the Companies have had to develop safe, efficient, and cost effective methods
24

1 of managing CCP. The Companies realize the long term viability of the existing and
2 future coal-fired generation depends on environmentally sound and economically
3 feasible management of coal combustion byproducts. As such, the Companies
4 developed a Comprehensive Strategy for Management of Coal Combustion
5 Byproducts for E.ON U.S. Subsidiaries Kentucky Utilities and Louisville Gas and
6 Electric ("CCP Strategy"), attached to my testimony as Exhibit JNV-2. The CCP
7 Strategy was developed through cross-functional coordination across various
8 departments in the Companies, and the cross-functional coordination continues to
9 assess the on-going requirements of proper handling and storage of CCP. The CCP
10 Strategy defines the approach the Companies are taking to mitigate needs associated
11 with the short- and long-term management of CCP at each generating facility. I am
12 the executive officer that was responsible for the development of the CCP Strategy,
13 and am the executive officer responsible for coordinating the execution of plans
14 adopted to implement the CCP Strategy.

15 The CCP Strategy is presented in six sections: Background, Future Needs,
16 Alternatives for Management of CCP, Evaluation Process, Site Specific CCP
17 Management Plans, and a Summary. The Background describes the Companies'
18 historical perspective of CCP management. The Future Needs section outlines a needs
19 assessment defining the projected future needs associated with the management of
20 CCP produced. Alternatives are developed to address the defined need. The
21 Evaluation Process describes the methodology utilized on an on-going basis to
22 evaluate the alternatives to mitigate a defined need for CCP management. This
23 section includes the consideration of beneficial reuse opportunities as not only a
24 means to satisfy a pending CCP disposal need but equally important as a socially

1 responsible and environmentally sound use of a coal combustion byproduct. The
2 strategy dictates a rigorous economic and environmental analysis supporting the
3 recommended alternative. The fifth section summarizes the site specific CCP
4 management plan for the generating stations with pressing CCP storage needs.

5 The Companies have identified the following CCP management plan for the
6 KU generating facilities:

- 7 • execution of Phase II of the ash treatment basin expansions of the main and
8 auxiliary basins at the Brown station (Project 29),
- 9 • phased construction of a new landfill (and supporting systems) at the Ghent
10 station (Project 30),
- 11 • vertical expansion of the existing Trimble County station ash treatment basin
12 (Project 31),
- 13 • relining (and commissioning) the Trimble County station gypsum storage
14 pond (Project 31)
- 15 • phased construction of a new landfill (and supporting systems) at the Trimble
16 County station (Project 32), and
- 17 • pursuing cost effective, environmentally responsible beneficial reuse
18 opportunities with Trans Ash, Synthetic Materials Company, and Holcim
19 (US) Inc. (Project 33). These beneficial reuse opportunities reduce the
20 required amount of on-site storage capacity and the cost associated with
21 managing CCP.

22 All CCP related projects are currently being implemented in accordance with the CCP
23 Strategy.

1 **Q. Please explain the “maximum desired storage capacity”.**

2 A. As explained in the CCP Strategy, the maximum desired storage capacity is a site
3 specific maximum amount of CCP the Companies forecast to be placed in the
4 treatment basin or landfill. It is based on unique characteristics of each facility
5 including CCP production rates, fuel quality variability, and impoundment/landfill
6 operational requirements.

7 **Q. How does the CCP Strategy address the risks associated with management of**
8 **CCP?**

9 A. Although the Companies pursue and execute beneficial reuse opportunities, adequate
10 on-site storage is needed to ensure continued operation of generating facilities. An
11 inherent risk associated with each beneficial reuse opportunity under contractual
12 obligation is the possibility that the beneficial reuse partner may not fully perform its
13 contractual obligations. On-site storage mitigates this risk in a cost effective manner.
14 The Companies’ approach is to continue to pursue and execute least-cost beneficial
15 reuse opportunities and maintain cost effective on-site storage capacity as a backstop
16 to support on-going operations.

17 **Q. Please describe the phased approach to CCP management?**

18 A. Phased construction consists of designing a CCP project to facilitate construction of
19 multiple subsets (phases) of the overall project. Utilizing the phased approach
20 incorporates flexibility and minimizes the cost impact associated with the project
21 through alignment of construction with need. This approach enables the Companies to
22 optimize total spend for the entire project and is consistent with the CCP Strategy
23 detailed in Exhibit JNV-2. The Companies have used, and continue to use, the phased
24 approach at the Brown station associated with the Phase I work on the treatment

1 basins currently in progress as a part of the 2005 Plan⁹. The phased approach to
2 landfill or impoundment construction maintains long-term planning and operational
3 flexibility by allowing the Companies to accommodate future beneficial reuse
4 opportunities as they become available or as the economics improve. Such
5 reconsideration of beneficial reuse may result in the delay or elimination of
6 subsequent phases of the project. This approach provides maximum flexibility in
7 support of dynamic conditions associated with CCP management and is the current
8 philosophy of the Companies for on-site CCP construction projects.

9

10 **Project 29 – Brown Station Ash Treatment Basin Expansions**

11 **Q. Please describe the expansion of the Brown ash treatment basins (Project 29),**
12 **the anticipated costs and associated timeline.**

13 A. The Brown Station, located in Mercer County, Kentucky, is comprised of three coal-
14 fired generating units. The Station's long-term, on-site CCP management plan is
15 phased expansion of the existing impoundment (the Main Pond) to an elevation of
16 962 feet and phased construction of a new ash pond (Auxiliary Pond). Consistent
17 with the 2006 ECR Update¹⁰ to the 2005 ECR Plan, the Auxiliary Pond was
18 completed to the ECR approved Phase I elevation of 880 feet in 2008 and the Main
19 Pond is on-schedule to reach the Phase I approved elevation of 902 feet by mid-2010.

20 Project 29 is comprised of the next phase (Phase II) of the construction
21 initially presented to the Commission in KU's 2005 ECR Plan. This Phase consists of
22 constructing the Auxiliary Pond to an elevation of 900 feet and the Main Pond to an
23 elevation of 912 feet. At an elevation of 900 feet, the Auxiliary Pond is projected to

⁹ Commission Order of June 20, 2005 (Case 2004-00426)

¹⁰ Presented to the Kentucky Public Service Commission on March 10, 2006.

1 contain sufficient capacity for bottom ash storage for approximately 30 years. The
2 Main Pond will have approximately six (6) years of projected remaining capacity
3 after elevation 912 feet is completed in 2012.

4 Exhibit JNV-8 is a conceptual design report for the Brown station ash
5 treatment basin, prepared by the Fuller Mossbarger Scott and May engineering firm.
6 Exhibit JNV-9 is a preliminary design report for the Brown station ash treatment
7 basin, also prepared by Fuller Mossbarger Scott and May engineering firm. Exhibits
8 JNV-8 and JNV-9 are on the compact disc included with this testimony and provide
9 more details associated with this project.

10 **Q. Is this project a cost-effective means of complying with environmental**
11 **regulations and permits?**

12 A. Yes, this project allows KU to continue to comply with all applicable environmental
13 regulations. As first demonstrated in Case No. 2004-00426, and consistent with the
14 2006 ECR Update made to the Commission staff, the phased approach to the
15 construction of the ash treatment basins continues to be the least-cost approach to
16 manage CCP at the Brown station. As detailed in the testimony of Mr. Schram, high
17 costs continue to preclude cost effective off-site alternatives.

18
19 **Project 30 – Ghent Station Landfill**

20 **Q. Please describe the new landfill at the Ghent Station (Project 30), the anticipated**
21 **cost and the associated timeline.**

22 A. Project 30 consists of the first phase (Phase I) of a three phase, new landfill
23 construction project at the Ghent station for continued on-site management of CCP.
24 Completion of this project requires the procurement of approximately 350 acres of

1 land and relocation of approximately 2,500 linear feet of transmission line, existing
2 underground utilities and a small cemetery (currently known to contain six burial
3 plots). The project includes a transport system for the CCP material and the
4 installation of a leachate collection/sediment retention pond. Phase I is expected to
5 cost approximately \$204 million with a total project capital cost (Phases I-III)
6 estimated to be approximately \$360 million. Phase I construction is expected to take
7 18-24 months to complete and is expected to be in-service by 2013.

8 Of the two existing on-site ash treatment basins, Basin #2 is currently the only
9 operational basin at the Ghent station. Basin #1 reached its maximum desired
10 capacity in 1995. Basin #2 was put into service in 1995 with a storage capacity of
11 2,580 acre-feet. In Case No. 2002-00208, KU advised the Commission that Basin #2
12 would be constructed in two phases. Detailed bids indicated that the two phase
13 construction to elevation 800 feet had a projected total cost of \$25.9 million (2002
14 dollars), while construction to 800 feet in one project had a total cost of \$17.3 million.
15 To take advantage of this significant cost savings, KU modified the construction
16 project and undertook a single project to elevate the dike to 800 feet. As mentioned
17 in Exhibit CRS-3 of Mr. Schram's testimony (the Coal Combustion Byproduct Plan
18 for the Ghent station), vertical expansion of Basin #2 beyond 800 feet at Ghent was
19 determined to be cost prohibitive.

20 Project 30 (Phase I of the proposed new landfill at the Ghent generating
21 station) includes the following scope of work:

- 22 1. **Initial Siting Study** (Completed) – This phase evaluated various CCP storage
23 locations on existing Ghent property and the area surrounding the plant. Initially,
24 42 landfill and impoundment scenarios were evaluated during this study.

1 2. **Conceptual Design** (Completed) – This phase took the results of the Initial Siting
2 Study and developed 5 storage alternatives and provided scope of work estimates
3 and net present value evaluations. Based on this data the best storage alternative
4 was chosen, Case #37 – Single 25 year, landfill located on both existing plant and
5 non-plant property.

6 3. **Final Design** (In Progress) – This phase will design and permit Case #37. Work
7 in this phase will include the landfill design/permitting, wetlands/stream
8 mitigation, transmission/distribution line relocation design, various environmental
9 studies, etc. The goal of this phase is to obtain the construction permits, develop
10 Issued for Construction drawings and specifications for all phases, as well as
11 develop the landfill O&M manual.

12 4. **Phase I Construction** – Once the Certificate of Public Convenience and
13 Necessity (“CPCN”) and the permits have been received, a contractor will be
14 chosen to perform the following (this is a high level list of activities):

- 15 • Mobilization
- 16 • Clearing and grubbing of the landfill and borrow areas
- 17 • Construction of stormwater/sediment ponds
- 18 • Grade work to attain the proper subgrade of the landfill
- 19 • Development of the borrow site(s)
- 20 • Installation of the liner system
- 21 • Installation of the leachate collection system, ponds, as well as the transfer
22 system
- 23 • Construction of new site access roads
- 24 • Installation of the gypsum fines systems
- 25 • Construction of the CCP transfer storage facility across US-42
- 26 • Installation of the pipe conveyor
- 27 • Construction of the Gypsum Dewatering facility
- 28 • Upgrades to existing CCP transfer systems
- 29 • De-mobilization

30

1 Exhibit JNV-10 consists of two GAI Consultants reports on the initial siting
2 study and conceptual design of the Ghent station landfill and is on the compact disc
3 included with this testimony. Exhibit JNV-10 provides more details associated with
4 this project.

5 **Q. Is KU requesting a CPCN for the proposed landfill at Ghent (Project 30)?**

6 A. Yes, as discussed in the testimony of Mr. Bellar, KU is requesting a CPCN for Project
7 30 in Exhibit JNV-1. Project 30 is associated with the construction of a new landfill
8 and supporting systems at the Ghent station.

9 **Q. Why is KU seeking a CPCN for Project 30, the proposed Ghent landfill at this**
10 **time?**

11 A. As discussed in Exhibit CRS-3 of Mr. Schram's testimony, KU's Ghent station
12 produces three (3) coal combustion byproducts: bottom ash, fly ash and gypsum. The
13 station has two (2) existing on-site treatment basins for ash and two (2) stacking areas
14 for gypsum. Basin #1 is at its maximum desired capacity. As discussed in Exhibit
15 CRS-3, Basin #2 and the gypsum stack facilities are both forecasted to reach their
16 maximum desired capacity in 2012. In accordance with the CCP Strategy and the
17 analysis presented in Mr. Schram's testimony, the recommended long-term CCP
18 management alternative is Project 30, a landfill for all CCP material. The preliminary
19 construction schedule for this project requires construction of the landfill to begin in
20 2010. As such, KU is requesting a CPCN in support of this project.

21 **Q. What alternatives to the proposed project were evaluated?**

22 A. The Initial Siting Study identified 42 potential alternatives based on combinations of
23 variables including

- 24 • storage and CCP transport methods

- 1 • site locations
- 2 • transmission line relocation needs

3 Consistent with the CCP Strategy, opportunities for beneficial reuse were also
4 evaluated by the Companies. The beneficial reuse alternatives at Ghent are discussed
5 in Project 33. Mr. Schram's testimony provides details associated with the evaluation
6 of the alternatives at Ghent.

7 **Q. Is the proposed new on-site landfill at Ghent (Project 30) consistent with the**
8 **Companies' strategy for long-term management of CCP?**

9 A. Yes. The landfill ensures adequate on-site CCP management capacity exists for the
10 long-term and will be constructed in multiple phases. Furthermore, as discussed in
11 Mr. Schram's testimony, analytical assessments have been performed to identify and
12 utilize any cost effective beneficial reuse alternatives in order to minimize
13 environmental impact and promote environmental stewardship.

14 **Q. Is this project a cost-effective means of complying with environmental**
15 **regulations and permits?**

16 A. Yes. Project 30 provides the best means of compliance with discharge and water
17 quality regulations. Mr. Schram's testimony provides details associated with the
18 economics of this project.

19 **Project 31 -- Trimble County Station**
20 **Ash Treatment Basin and Gypsum Storage Pond**

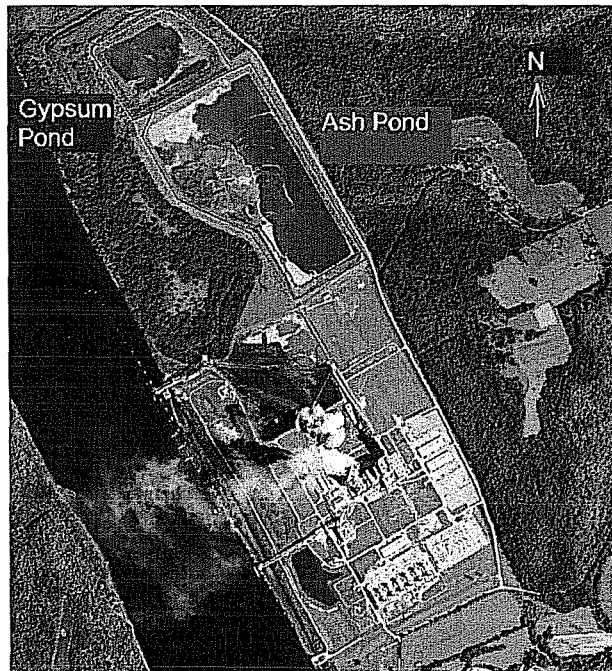
21 **Q. Please describe the Trimble County Station Ash Treatment Basin and Gypsum**
22 **Storage Pond (Project 31), the anticipated cost and the associated timeline.**

23 A. The primary CCP managed at the Trimble County station are bottom ash, fly ash and
24 gypsum, all of which are currently managed either through treatment in the 85 acre

1 ash treatment basin (see photo below) located north of the generation station or
2 through beneficial reuse opportunities.

3 Trimble County also has an existing pond formally called the Emergency Fly
4 Ash Pond, now known as the Gypsum Storage Pond located just north of the ash
5 treatment basin. This gypsum storage pond was built during the construction of
6 Trimble 1 and was never placed in service. In order to meet the short term CCP
7 storage needs of the plant and to allow adequate time to develop, permit, and
8 construct the long term storage alternative, additional storage is required to support
9 on-going plant operations.

10 Trimble County Station



11
12 Based on current forecasts for CCP production (without additional on-site
13 storage capacity, off-site storage or new beneficial reuse opportunities) the ash
14 treatment basin is expected to reach its maximum desired capacity in 2010, as

1 discussed in the testimony of Mr. Schram. This creates a need for additional CCP
2 management solutions.

3 Project 31 is the vertical expansion of the ash treatment basin's north, south
4 and west dikes and conversion of the permitted, but inactive, emergency fly ash pond
5 to a new gypsum storage pond. The ash treatment basin will be expanded by
6 approximately 30 feet to a final elevation of 530 feet (which will increase the
7 maximum desired capacity by 2.1 million cubic yards) at a total cost of \$25.3 million.
8 The conversion of the permitted, but inactive, fly ash basin to a new gypsum storage
9 pond through the installation of a synthetic liner will provide a maximum desired
10 capacity of 1.1 million cubic yards at a total cost of \$7.6 million. These capital costs
11 will be borne 75% by the Companies and 25% by partners Indiana Municipal Power
12 Association ("IMPA") and Illinois Municipal Energy Association ("IMEA"). The
13 Companies will share the utility portion of the landfill, with LG&E owning
14 approximately 52% and KU owning approximately 48% of the facility. Therefore,
15 KU's share of the Phase I cost of the ash treatment basin and gypsum ash pond
16 expansion is expected to be approximately \$11.84 million. The vertical expansion of
17 the ash treatment basin and utilization of the gypsum storage pond will provide
18 sufficient on-site storage through 2012.

19 The following activities summarize the scope of work associated with the
20 vertical expansion of the ash treatment basin and placing the new gypsum storage
21 pond into operation:

- 22 1. **Conceptual Design** (Completed) – This phase determined if raising the existing
23 ash treatment basin embankments to their original designed and permitted
24 elevation as well as placing the gypsum storage pond into service was cost

1 effective. In addition a stability analysis was performed on the existing ash
2 treatment basin to verify the original design was still acceptable. Based on the
3 cost and stability analysis it was determined that the ash treatment basin
4 embankments could be raised and the gypsum storage pond could be placed into
5 service. This project is needed to provide adequate time to permit and construct
6 the first phase of the landfill project ensuring long-term on-site storage is
7 available.

8 2. **Final Design** (Completed) – This phase provided detailed design drawings and
9 specifications to raise the ash treatment basin embankments and line the gypsum
10 storage pond. As part of that process several soil borings and various studies
11 were performed. In addition to the design drawings all the applicable
12 construction permits were applied for and received.

13 3. **Phase I Construction** (In Progress) – The construction contractor has been
14 chosen to perform the following activities (this is a high level list of activities):

- 15 • Mobilization
- 16 • Clearing and grubbing of the ash treatment basin embankments and
17 borrow areas
- 18 • Installation of stormwater/sediment controls
- 19 • Construction of the ash treatment basin's north, west, and south
20 embankments using a combination of clay, bottom ash, and Mechanically
21 Stabilized Earth walls
- 22 • Remove saturated soils from the gypsum storage pond
- 23 • Grade work to attain the proper subgrade in the gypsum storage pond
- 24 • Installation of the gypsum storage pond liner system
- 25 • Installation of the new gypsum storage pond KPDES outfall
- 26 • Upgrades to existing plant mechanical transport systems to account for
27 increased head capacities from raising the ash treatment basin height
- 28 • Installation of the new ash treatment basin and gypsum storage pond raft
29 and pump systems
- 30 • Construction of access roads
- 31 • De-mobilization
- 32

1 Exhibit JNV-11, MACTEC Engineering's report on modifying the ash treatment
2 basin at the Trimble County station is on the compact disc included with this
3 testimony. Exhibit JNV-11 provides more details associated with this project.

4 **Q. Is this project a cost-effective means of complying with environmental**
5 **regulations?**

6 A. Yes. Mr. Schram's testimony provides details associated with the economics of this
7 project.

8 **Project 32 -- Trimble County Station Landfill**

9 **Q. Please describe the new Trimble County Station landfill (Project 32), the**
10 **anticipated cost and the associated timeline.**

11 A. Project 32 consists of constructing the first phase (Phase I of four phases) of a new
12 210 acre on-site landfill at the Trimble County station. Phase I is expected to cost
13 \$94.04 million (total). The total landfill project capital cost, including the Synthetic
14 Materials and Holcim beneficial reuse contracts, is estimated to be \$551 million. The
15 Synthetic Materials and Holcim beneficial reuse opportunities allow the deferral of
16 future phases and the capital expenditures associated with those phases. Construction
17 of Phase I is expected to take 18-24 months to complete and is expected to be in-
18 service in January 2013.

19 As presented in Exhibit CRS-4, Coal Combustion Byproduct Plan for Trimble
20 County Station, the total Phase I cost of the landfill is anticipated to be approximately
21 \$94.04 million. The Companies will be co-owners of 75% of the landfill, with
22 partners IMPA and IMEA owning jointly approximately 25%. The Companies will
23 share the utility portion of the landfill, with LG&E owning approximately 52% and

1 KU owning approximately 48% of the facility. Accordingly, KU's share of the Phase
2 I cost of the landfill is expected to be approximately \$33.86 million.

3 The following activities summarize the Phase I scope of work:

- 4 1. **Initial Siting Study** (Completed) – This phase identified 26 potential CCP
5 storage alternatives on existing Trimble County station property and the area
6 surrounding the ravines. Of the 26 potential alternatives, nine landfill
7 scenarios were evaluated during this study, including a scope of work estimate
8 and net present value evaluation.
- 9 2. **Conceptual Design** (In Progress) – This phase used the results of the Initial
10 Siting Study and developed three storage alternatives for scope of work
11 estimates and net present value evaluations. Based on these evaluations, the
12 best storage alternative was chosen that meets the station's overall needs.
- 13 3. **Final Design** – This phase will design and permit the case chosen during the
14 conceptual design. Work in this phase will include the landfill
15 design/permitting, wetlands/stream mitigation, transmission/distribution line
16 relocation design, various environmental studies, etc. The ultimate goal of
17 this phase is to obtain the construction permits, develop Issued For
18 Construction drawings and specifications for all phases, as well as develop the
19 landfill O&M manual.
- 20 4. **Phase I Construction** – Once the permits and CPCN have been received a
21 contractor will be chosen to perform the following (this is a high level list of
22 activities):
 - 23 • Mobilization
 - 24 • Harvesting of timber
 - 25 • Clearing and grubbing of the landfill and borrow areas

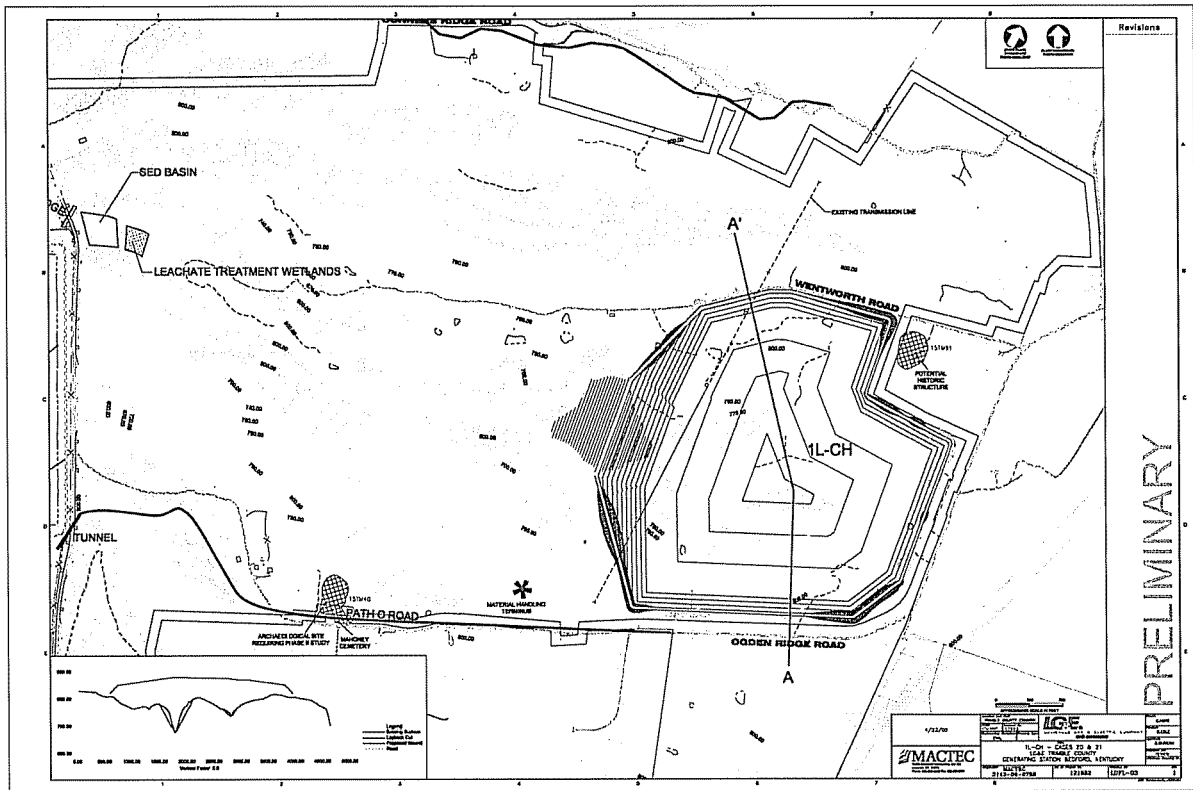
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

- Construction of stormwater/sediment ponds
- Construction of the stream and wetlands mitigation. This work will be done on Corn Creek.
- Grade work to attain the proper subgrade of the landfill
- Development of borrow site(s)
- Installation of a liner system, a leachate collection system, and the CCP transfer system from the station to the landfill
- Construction of new site access roads
- Construction of the CCP transfer storage facility and pipe conveyor systems
- Construction of the Gypsum Dewatering facility
- Upgrades to existing CCP transfer systems
- De-mobilization

As shown in the following drawing, the landfill will be located on existing plant property in the upper area of Ravine B just east (across County Road 1838) from the existing ash treatment basin. Exhibit JNV-12, MACTEC Engineering and Consulting Report on the preliminary conceptual design for the Trimble County station's landfill, is on the compact disc included with this testimony. Exhibit JNV-12 provides more details associated with this project.

1
2

Proposed Trimble County Station Landfill Location



3
4
5
6
7
8
9
10
11
12
13
14

As previously discussed in this testimony, Project 32 is for Phase I (\$94.0 million) of the new 210 acres (approximate) landfill located at the Trimble County station. The design of the proposed landfill is in the initial conceptual phase, and the Companies have begun the permit application process. Under Division of Waste Management regulations, permit applications for special waste landfills must be accompanied by specific and detailed engineering drawings. The Companies have retained MACTEC Engineering to develop the permit applications, and while the applications are in development, the Companies' are meeting regularly with staff from the Division of Waste Management. These meetings serve to keep the Division of Waste Management staff apprised of the status of the application development and provide staff with the opportunity to advise the Companies of concerns that arise

1 during the development of the application. The result of this collaborative approach
2 is a permit application that could be approved within the minimum suggested
3 regulatory timeframes.

4 **Q. Is KU requesting a CPCN for the proposed Trimble County landfill (Project**
5 **32)?**

6 A. Yes, as discussed in the testimony of Mr. Bellar, KU is requesting a CPCN for Project
7 32 in Exhibit JNV-1. Project 32 is associated with the construction of a new landfill
8 and supporting systems at the Trimble County station.

9 **Q. Why are KU and LG&E seeking a CPCN for Project 32, the proposed Trimble**
10 **County station landfill at this time?**

11 A. As discussed in Exhibit JNV-2, CCP Strategy, the Trimble County station will need
12 additional storage space for the ash and gypsum currently being produced by Trimble
13 1 (and Trimble 2 upon commercial operation). As discussed in this testimony
14 associated with the ash treatment basin and gypsum storage pond (Project 31), current
15 assessments indicate that after completion of Project 31, the ash treatment basin and
16 gypsum storage pond will be inadequate to hold additional CCP as soon as 2012
17 (depending on the quantity of CCP taken off-site for beneficial reuse). The
18 Companies expect construction of the proposed landfill to take up to two years from
19 the issuance of the CPCN and permits before the proposed landfill facility can accept
20 material.

21 **Q. What alternatives to the proposed project were evaluated?**

22 A. The Initial Siting Study identified over 26 potential alternatives based on
23 combinations of variables including

- 24 • storage and CCP transport methods

- 1 • site locations
- 2 • transmission line relocation needs

3 Consistent with the CCP Strategy, opportunities for beneficial reuse were also
4 evaluated by the Companies. The beneficial reuse alternatives at the Trimble County
5 station, as discussed in Project 33, were also evaluated. Mr. Schram's testimony
6 provides details associated with the evaluation of the alternatives at Trimble County.

7 **Q. Is the proposed new landfill at the Trimble County station (Project 32)**
8 **consistent with the Companies' strategy for long-term management of CCP?**

9 A. Yes. The landfill ensures adequate on-site CCP management capacity exists for the
10 long-term. Furthermore, as discussed in Mr. Schram's testimony, analytical
11 assessments have been performed to identify and utilize any cost effective beneficial
12 reuse alternatives in order to minimize environmental impact and promote
13 environmental stewardship.

14 Two known beneficial reuse opportunities exist for the Trimble County
15 station. In accordance with the CCP Strategy, evaluations have been performed
16 assessing economic and environmental feasibility. One opportunity is in the process
17 of execution and the other is in negotiations. The identified need can not be
18 completely satisfied by these two beneficial reuse opportunities; thus on-site storage
19 is required. Project 32 is a phased landfill to mitigate the remaining need.

20 **Q. Is this project a cost-effective means of complying with environmental**
21 **regulations?**

22 A. Yes. Project 32 provides the best means of compliance with discharge and water
23 quality regulations. Mr. Schram's testimony provides details associated with the
24 economics of this project.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

Project 33 -- Beneficial Reuse

Q. What is meant by the phrase “beneficial reuse”?

A CCP are considered non-hazardous by the EPA and it has allowed individual states to regulate their use. Kentucky considers CCP a non-hazardous, special waste and has enacted 401 KAR 45:060 which is a “special waste permit-by-rule” statute. As long as the generator abides by all aspects of the rule, reuse of the CCP is considered permitted-by-rule and no special permitting is required by the state. Pre-approved uses of the CCP include, but are not limited to, uses in cement, concrete, paint and plastics; spreading on roadways for winter time “anti-skid” material; highway base course construction; structural fill; blasting grit, roofing shingle granules and mine stabilization and reclamation material.

If the CCP are used in the manufacturing of a product or are used to replace natural soils or aggregates, the use is considered a “beneficial reuse”. The EPA has also begun a program titled Coal Combustion Partnership Program to encourage and increase the use of CCP, and it defines beneficial reuse as follows: “The beneficial use of CCP involves the use of, or substitution of, coal combustion products for another product based on performance criteria. Beneficially using CCP can generate significant environmental, economic, and performance benefits. For purposes of the Coal Combustion Partnership Program, beneficial use includes, but is not restricted to, raw feed for cement clinker, concrete, grout, flowable fill, structural fill, road base/sub-base, soil-modification, mineral filler, snow and ice traction control, blasting

1 grit and abrasives, roofing granules, mining applications, wallboard, waste
2 stabilization/solidification, soil amendment, and agriculture”¹¹.

3 Beneficial reuse of CCP allow utilities to manage their expenses by providing
4 an outlet for the CCP at a cost less than the cost for placing in on-site storage
5 facilities while also allowing natural materials to be preserved for use by future
6 generations.

7 **Q. Please describe the beneficial reuse market for CCP.**

8 A. CCP materials are produced after the preparation and burning of coal and the removal
9 of particulates or sulfur from the flue gases that exit a coal fired boiler. For many
10 years, these high volume materials were mostly considered unusable wastes and
11 generators of electrical power placed them in landfills, surface impoundments, or
12 other disposal facilities.

13 Initially, reuse was not a wide-spread consideration. As the CCP materials
14 accumulated and disposal costs escalated, companies, universities, individuals, and
15 other interested parties began to evaluate the inherent properties of CCP and whether
16 they could be used for construction and other applications. The pozzolanic properties
17 of classes of fly ash provided the first, wide-spread reuse of these byproducts as a
18 substitute for cement in the ready mix concrete market. This type of reuse has
19 evolved into one of the most common in the CCP market, which has expanded to
20 include the supply of ingredients in the manufacture of cement, flowable fill, gypsum
21 wallboard, paints, abrasives, lightweight aggregates, and other construction-type
22 materials.

¹¹ Available at: <http://www.epa.gov/osw/conservation/rrr/imr/ccps/index.htm>

1 As utilities realized the potential economic benefit of reuse of the CCP that
2 were traditionally disposed of on-site, they sought out markets for their uses.
3 However, the recent increase of FGD installations across the nation has resulted in the
4 market for reuse of CCP to become oversaturated. This has caused, in many cases, the
5 market for the use of CCP to transition from a revenue stream to a cost stream. Most
6 utilities will now subsidize a project if the subsidy required is less than the cost for
7 disposal in on-site storage facilities. Since the competing materials for CCP are
8 typically natural soils or minerals that may be closer to the end user, transportation
9 costs play a key role in the justification of a particular project.

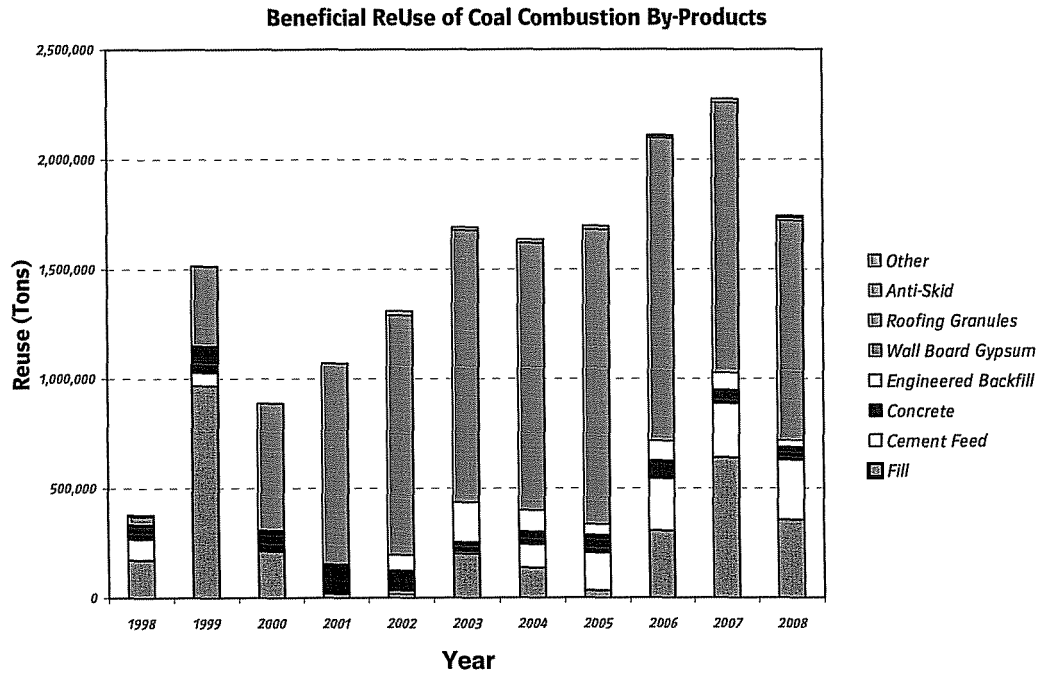
10 In spite of the significant progress made in identifying CCP applications, it is
11 estimated that 40 percent or less of the materials generated from coal combustion are
12 reused in the United States.

13 **Q. Please describe Project 33 in the KU 2009 Plan.**

14 A. Project 33 seeks to recover the costs associated with beneficial reuse alternatives
15 which, after an environmental and economic assessment, are deemed prudent for both
16 the environment and for customers. The CCP material, if not beneficially reused,
17 would increase costs to customers associated with the management of CCP by
18 accelerating construction that could otherwise have been deferred, or by increasing
19 the required size/scope of on-site storage alternatives. As stated in Mr. Bellar's
20 testimony, KU is seeking authorization to pursue and proceed with beneficial reuse
21 opportunities without being subject to amending the Company's Compliance Plan.
22 Each reuse opportunity would be evaluated consistent with the analytical approach
23 discussed in Mr. Schram's testimony. As discussed in the CCP Strategy, the
24 Companies continually seek economical and environmentally sound beneficial reuse

1
2
3
4
5

opportunities and have a history of utilizing beneficial reuse of CCP. Historically, the Companies have successfully identified and negotiated beneficial reuse contracts for wallboard production, cement kiln feed, and fill or backfill (see chart below). As discussed below, efforts are underway to expand the amount of the Companies' CCP reuse.



6
7
8
9
10
11
12
13
14

Although the Companies have been successful at executing beneficial reuse, as shown above, not all opportunities materialize. The table below summarizes a few recent opportunities. As evidenced in the table, many opportunities pursued do not result in CCP leaving the site. Any one of the following may eliminate a potential beneficial reuse opportunity from being implemented: (1) issues are identified during an environmental review of the potential reuse or location, (2) inability to meet the short lead times, (3) unfavorable economics or, (4) in the case of using CCP in a manufacturing process, negative impacts on product quality.

| Potential Partnership with | Possible Use | CCP Material | Current Status | Primary Reason for Not Pursuing |
|--|--------------------|--------------|----------------|---|
| 1 Florida Tile | Tile Manufacturing | Ash | Not Pursued | Negatively impacted product quality. |
| 2 Charah | Cinder Blocks | Ash | Not Pursued | Negatively impacted product quality. |
| 3 Lawrenceburg, Kentucky | Structural Fill | Ash | Not Pursued | Disapproval from Environmental Affairs Dep. |
| 4 Ohio Valley Raceway | Structural Fill | Ash | Not Pursued | Disapproval from Environmental Affairs Dep. |
| 5 West Point, Ky (2 sites) | Structural Fill | Various | Not Pursued | Disapproval from Environmental Affairs Dep. |
| 6 Trans Ash Inc. | Roofing Granules | Ash | Not Pursued | CCP did not meet specifications |
| 7 Universal Minerals | Blasting Grit | Ash | Not Pursued | CCP did not meet specifications |
| 8 Site in Campton, Ky | Structural Fill | Ash | Not Pursued | Not economical |
| 9 American Engineering | Structural Fill | Ash | Not Pursued | Not economical |
| 10 Nugent Sand | Structural Fill | Ash | Not Pursued | Not economical |
| 11 Trans Ash Inc. | Structural Fill | Gypsum | Pursuing | n/a |
| 12 Holcim (US) Inc. | Cement Production | Ash | Pursuing | n/a |
| 13 Merlu, LLC (Louisville Underground) | Structural Fill | Various | Pursuing | n/a |
| 14 Synthetic Materials | Wallboard | Gypsum | Executed | n/a |

2

3

4

5

6

Three specific economically and environmentally sound beneficial reuse opportunities included in Project 33 are the Synthetic Materials gypsum opportunity at the Trimble County station, the Holcim fly ash opportunity at the Trimble County station, and the Trans Ash opportunity at the Ghent station.

7

8

9

10

11

12

13

14

First, a contract was executed in December 2007 for the Trimble County station Synthetic Materials gypsum opportunity. The project consists of transporting gypsum for use in wallboard manufacturing. This reuse contract will divert at least 50% of the gypsum associated with Units 1 and 2 of the Trimble County station (approximately 300,000 tons/yr). No capital investment by the Companies is required for this opportunity. Page 2 of Exhibit JNV-1 outlines the anticipated annual operations and maintenance cost for this reuse. The economics associated with this reuse are presented in Mr. Schram's testimony.

15

16

17

18

19

A second opportunity is for the Trimble County station's fly ash to be taken by Holcim; this opportunity is currently in the final stages of negotiation and involves reusing fly ash from the Trimble County station in cement production. The opportunity consists of transporting fly ash by barge from Trimble County to a cement manufacturer in Genevieve County, Missouri. In Missouri, the fly ash will be

1 used by Holcim as raw kiln feed (in place of clay that would have to be mined) in the
2 cement clinker production process. This reuse opportunity will divert approximately
3 95% of Trimble County's fly ash (up to 350,000 tons starting in 2011; after the initial
4 start up period of the kiln) from being placed in the existing ash pond or newly
5 constructed landfill at Trimble County. This opportunity is the single largest
6 beneficial reuse opportunity of fly ash known by the Companies that currently exists
7 in the United States. The project requires the Companies to invest in a barge loadout
8 and ash handling system at an estimated total cost of \$11.5 million. The KU portion
9 of this capital expenditure is approximately \$4.17 million as shown on Page 1 of
10 Exhibit JNV-1, Project 33. The ash, if not beneficially reused, will have to be stored
11 in the proposed landfill, thereby increasing cost to customers of on-site management
12 of CCP by accelerating the need to start construction of Phase II of the landfill by 8
13 years (forecasted to move to 2021 from 2029 without Holcim) and requiring a 3rd
14 Phase of on-site construction (forecasted to begin in 2040).

15 A third beneficial reuse opportunity currently under consideration consists of
16 an opportunity to contract with Trans Ash to transport ash or gypsum from the Ghent
17 Station for use as structural fill. The project will transport between 650,000 tons and
18 1 million tons of CCP per year off-site, for three years. This opportunity allows the
19 station to continue to operate without exceeding the maximum desired capacity of
20 existing on-site ash treatment basins and gypsum stacks as previously discussed in
21 this testimony.

22 Environmental regulations require the Companies to manage or otherwise
23 prevent the discharge of CCP into the atmosphere and waterways. These projects
24 provide an opportunity to significantly reduce CCP disposal costs by transporting

1 CCP off-site for beneficial reuse under strict environmental controls. Additionally,
2 these specific beneficial reuse opportunities reduce the cost of managing CCP
3 produced at the Trimble County and Ghent stations and support the tenents of the
4 Companies' CCP Strategy. Economic and environmental evaluations will be
5 documented for all future beneficial reuse opportunities, and those opportunities
6 found to be cost effective and environmentally sound will be executed under Project
7 33

8 **Q. Does the proposed project (Project 33) provide a cost effective way to both**
9 **comply with environmental regulations and permits and a cost-effective means**
10 **of managing CCP?**

11 A. Yes. Mr. Schram's testimony provides details associated with the economics of three
12 beneficial reuse opportunities which reduce the cost of managing CCP produced at
13 the Trimble County and Ghent generation stations and support the tenants of the CCP
14 Strategy. In addition, Mr. Schram's testimony outlines the evaluation process to be
15 used for future beneficial reuse opportunities to be included in Project 33.

16
17 **Project 23 -- Trimble County Unit 2 Air Quality Control System**

18 **Q. Is KU requesting to amend the Trimble County Unit 2 Air Quality Control**
19 **System (Project 23)?**

20 A. Yes. Recovery of the capital costs associated with the AQCS was approved in Case
21 No. 2006-00206 and the Companies request this amendment to recover the
22 incremental operation and maintenance costs associated with these systems. As
23 indicated in Exhibit JNV-1 (page 2 of 2) the Companies anticipate that KU's portion
24 of the incremental costs associated with operating and maintaining the AQCS at

1 Trimble County will exceed \$8.8 million dollars in 2011 (the first full year of
2 operation).

3
4 **Project 28 -- Brown Selective Catalytic Reduction System**

5 **Q. What are the environmental requirements causing the need for installation of a**
6 **selective catalytic reduction system on E.W. Brown Unit 3?**

7 A. Under a March 17, 2009 consent decree with EPA and Department of Justice
8 (“DOJ”), KU is required to install a selective catalytic reduction (“SCR”) system for
9 E.W. Brown Unit 3 (“Brown 3”) by December 31, 2012 in order to comply with the
10 New Source Review provisions of the Clean Air Act. The consent decree is attached
11 to this testimony as Exhibit JNV-13.

12 **Q. Please describe the New Source Review provisions of the Clean Air Act.**

13 A. The Clean Air Act’s New Source Review program provides that new sources and
14 sources that undertake major modifications are subject to more stringent emission
15 control requirements under the Prevention of Significant Deterioration regulations,
16 including the requirement to install BACT. A major modification is defined as a
17 physical change or change in the method of operation that results in a significant
18 emissions increase. Routine maintenance, repair, and replacement activities are not
19 considered to be modifications. A BACT determination for a source includes not
20 only a specific emission control technology, but also emission limits in the source’s
21 air permit that reflect proper operation of that control technology. With respect to
22 nitrogen oxides emissions (“NO_x”) from an electric utility boiler, an SCR is
23 considered BACT.

1 **Q. What is the basis for EPA concluding that the New Source Review requirements**
2 **apply to an existing unit such as Brown 3?**

3 A. In 1997, KU performed work on the Brown 3 turbine and boiler reheater to correct
4 past problems with the turbine and optimize boiler performance. At the time of the
5 projects in 1997, KU believed the work performed to be routine maintenance, which
6 was exempt from New Source Review requirements. KU's position was consistent
7 with the interpretations of companies throughout the electric utility industry which
8 undertook similar projects and the prior interpretations of federal environmental
9 regulatory officials.

10 **Q. Why did KU conduct the turbine and boiler reheater work on Brown 3 in 1997?**

11 A. KU experienced significant operational problems with the Brown 3 turbine including
12 a catastrophic blade failure in 1995 that rendered the turbine inoperable for a
13 significant time period. In addition, the Brown 3 boiler reheater experienced
14 differential temperature problems that contributed to unit outages. The work
15 conducted in 1997 was aimed at avoiding potential future outages and resulting
16 reductions in output for Brown 3. The work improved the efficiency of the turbine
17 and resulted in up to an additional 40 megawatts of production at comparable steam
18 flows.

19 **Q. What are the environmental requirements causing the need for installation of an**
20 **SCR on Brown 3?**

21 A. Under the March 17, 2009 consent decree with the EPA, KU is required to install an
22 SCR device for Brown 3 by December 31, 2012 in order to comply with the New
23 Source Review provisions of the Clean Air Act.

24 **Q. Why is KU required to install an SCR on Brown 3?**

1 A. After issuance of the notice of violation, KU entered into extensive negotiations with
2 EPA and DOJ in an effort to reach a settlement. In my current position, I served as
3 the lead negotiator for reaching a settlement. A key element of EPA's settlement
4 demand was the installation of an SCR as BACT for NO_x on Brown 3. It is well
5 established under existing administrative precedent that an SCR is the currently
6 accepted BACT control for NO_x. KU concurred that SCR controls constitute BACT
7 for NO_x, although KU contended that it had not undertaken a major modification at
8 Brown 3 triggering the obligation to install BACT.

9 **Q. If KU contended that it had not undertaken a major modification subjecting**
10 **Brown 3 to BACT requirements, why did KU enter into the Consent Decree**
11 **requiring installation of the SCR?**

12 A. The New Source Review regulations are complex and subject to differing
13 interpretation. KU believes that it complied with the relevant regulations under the
14 generally accepted regulatory interpretations recognized by both EPA and the electric
15 utility industry in 1997. However, subsequent to completion of the work in 1997,
16 EPA announced additional regulatory interpretations which departed from past
17 precedent. In addition, various courts issued judicial rulings interpreting some of the
18 provisions in question, with some courts adopting conflicting interpretations of the
19 same regulation. From the completion of the work on Brown 3 in 1997 to EPA's
20 issuance of the notice of violation to KU in 2006, EPA issued almost 50 notices of
21 violation to other utilities, filed more than 35 lawsuits, and entered into more than 10
22 utility settlements involving similar New Source Review claims. Upon issuance of
23 the notice of violation to KU and commencement of the lawsuit, KU analyzed the
24 subsequent regulatory interpretations by EPA, the relevant judicial opinions, and

1 developments in EPA's other pending New Source Review enforcement cases. After
2 assessing the merits of EPA's claims against KU, analyzing the Company's litigation
3 risks, and considering the potential for future regulations that would likely mandate
4 additional NO_x reductions, KU determined that installation of an SCR as NO_x BACT
5 was in the best interest of the Company and its customers.

6 **Q. What are the litigation risks that KU faced if it had opted to litigate, rather than
7 settle, the EPA enforcement case?**

8 A. KU faced a variety of litigation risks including the potential imposition of significant
9 operational restrictions, the possibility of requirements for shut down of Brown 3 and
10 assessment of major civil penalties. Among other risks, there was the potential for
11 the court to order stringent emission limits that could potentially dictate fuel
12 switching to lower sulfur coal in place of the high sulfur coal which KU planned to
13 use upon completion of FGD controls at the Brown Station. KU projected that
14 imposition of an absolute emission limit of 0.10 lbs SO₂/mmBtu would require the
15 installation of an FGD and the procurement of low to medium sulfur coals that could
16 result in increased fuel costs of nearly \$400 million from 2010 to 2026. KU opted to
17 mitigate these risks by negotiating a consent decree that would not result in undue
18 disruption of its operations. For example, KU negotiated language in the consent
19 decree that allows the additional flexibility of a 97% SO₂ control efficiency target as
20 an alternative to a limit of 0.10 lbs SO₂/mmBtu.

21 **Q. Did KU consider over-controlling an existing SCR on a different unit, installing
22 a new SCR on a different unit, or surrendering NO_x emission allowances in lieu
23 of installing an SCR on Brown 3?**

1 A. No. Unlike cap and trade programs where a utility may choose the units which it
2 desires to control or comply by surrendering emission allowances in lieu of installing
3 controls, under the New Source Review regulations, BACT controls are mandatory
4 for all units which are subject to the program. As a practical matter, the only options
5 available to a source which triggers New Source Review requirements are installation
6 of BACT or cessation of operation of the generating unit in question. Consequently,
7 the only compliance options available to KU in this instance are installation of an
8 SCR device or shut down of Brown 3.

9 **Q. What were the other key provisions of the March 17, 2009 consent decree with**
10 **EPA?**

11 A. In addition to installation of the SCR, KU also formally committed to install flue gas
12 desulfurization controls for Brown 3 which were already under construction. Other
13 elements of the settlement include (1) payment of a \$1.4 million civil penalty; (2)
14 funding of \$3 million in environmental mitigation projects consisting of a carbon
15 sequestration test well project, low emission school bus retrofit program, and
16 Mammoth Cave forestry project; (3) surrender of excess SO₂ and NO_x emissions
17 allowances; and (4) compliance with specified emissions limits and heat input limits.

18 **Q. What environmental permits will be required for the installation of the selective**
19 **catalytic reduction device?**

20 A. It will be necessary to obtain a permit modification from the Kentucky Division for
21 Air Quality which will be incorporated into the plant's current Title V Operating
22 Permit. The current Title V permit is identified as Exhibit JNV-14 on the compact
23 disc included with this testimony. The application for the permit modification to
24 construct and operate an SCR is scheduled to be submitted to the Division for Air

1 Quality in July 2009. A copy of the SCR permit application will be provided to the
2 Commission following its submission to the Division for Air Quality.

3 **Q. What analyses and conclusions will be made within this permit application?**

4 A. Previous permit applications for the installation of an SCR did not include the
5 installation of a sorbent injection system to control sulfuric acid mist emissions. The
6 sorbent injection systems were added later for sulfuric acid mist control to ensure
7 compliance with opacity requirements. However, based on the current New Source
8 Review rules, it has been determined that a significant increase in sulfuric acid mist
9 will occur with the installation of the SCR and thus the permit application will
10 include a Prevention of Significant Deterioration permit application. Under previous
11 New Source Review regulations, the sulfuric acid mist emission increase associated
12 with a pollution control project was exempt. However, the regulation that included
13 the pollution control project exemption was vacated by D.C. Circuit Court of Appeals
14 in June 2005. The Prevention of Significant Deterioration permit application will
15 include a BACT determination for sulfuric acid mist concluding that the BACT for
16 sulfuric acid mist on Brown 3 is sorbent injection. Sorbent injection technology will
17 be installed as part of the SCR installation project for Brown 3 and will represent Best
18 Available Control Technology for sulfuric acid mist and ensure compliance with the
19 unit's opacity standard.

20 **Q. Will there be any operational or maintenance costs associated with the SCR?**

21 A. Yes, the SCR requires the use of ammonia for proper operation. Also, in order to
22 maintain the required NO_x emission limit, the SCR catalyst must be replaced or
23 regenerated (replacement SCR catalyst is capitalized in the Company's financial
24 records). Each of these required O&M or capital activities have an associated cost.

1 **Q. Please describe the Brown 3 SCR system, the anticipated cost and the associated**
 2 **timeline for Project 28.**

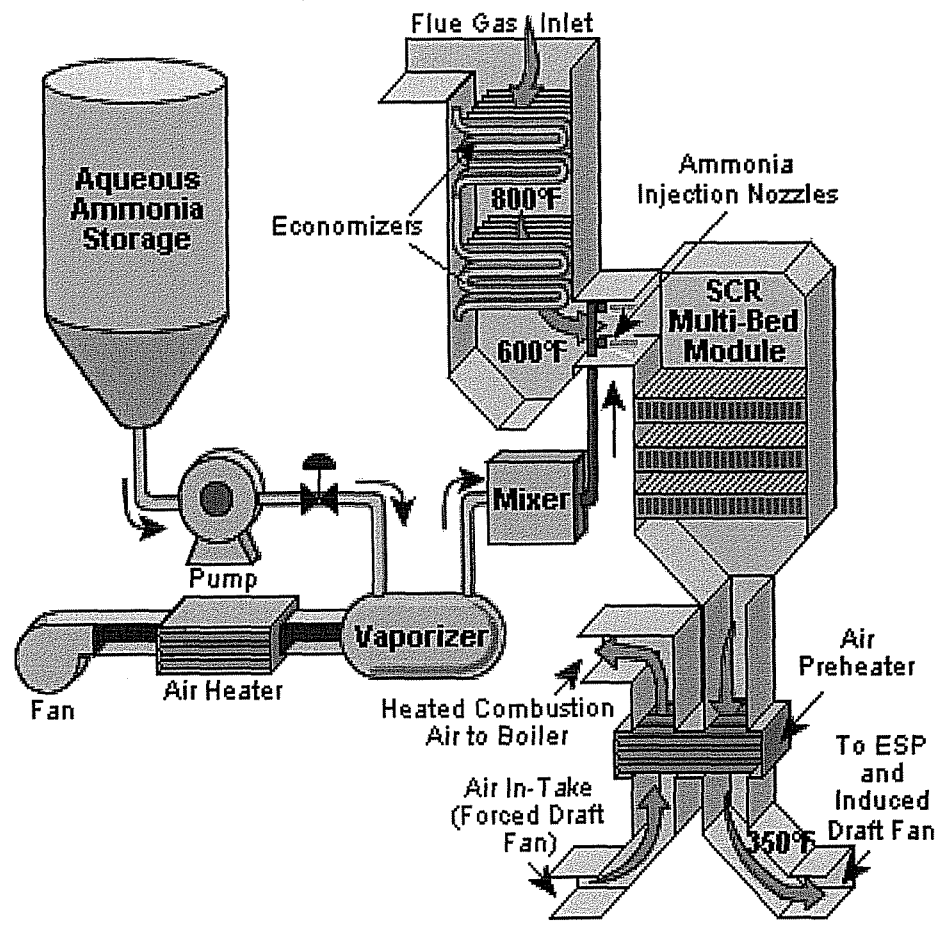
3 A. Project 28 consists of constructing an SCR on Brown 3. Consistent with the consent
 4 decree and as discussed in the testimony of Mr. Bellar, the new SCR is to be placed in
 5 operation no later than December 31, 2012. The total cost of this project is estimated
 6 to be \$183.85 million and is summarized in the table below. Construction is expected
 7 to take 24-30 months to complete after one year of engineering and procurement.

| SCR Cost Estimate (\$ in thousands) | Brown 3 SCR |
|--------------------------------------|------------------|
| Direct Labor/Material/Subs | \$102,800 |
| Construction Facilities & Services | \$5,228 |
| Field Staff & Per Diems | \$9,714 |
| Equipment Rental, Tools, Consumables | \$10,971 |
| Engr/Insur/Bonds/Permits/Taxes | \$10,362 |
| Commissioning | \$372 |
| Contingency, Fee, Freight | \$14,889 |
| Spares | \$756 |
| Safety Incentive | \$443 |
| SCR Sub-Total | \$155,535 |
| Air Heater Modifications | \$5,000 |
| Economizer Modifications | \$5,000 |
| SO3 Mitigation | \$7,000 |
| KU Project Mgmt, Outside Services | \$11,315 |
| Total SCR | \$183,850 |

8
 9 The purpose of the SCR technology is to reduce emissions of NO_x. Reduction of NO_x
 10 on the order of 90% is obtainable via SCR technology. The SCR technology is a
 11 process in which ammonia reacts with nitrogen oxides to form molecular nitrogen and
 12 water. Combustion flue gases pass through the channels of the catalyst. The catalyst
 13 enhances the reactions between the NO_x and ammonia and is usually composed of
 14 tungsten and vanadium configured in a plate or honeycomb arrangement. For
 15 procurement flexibility, all existing SCRs within the Companies' generation fleet are
 16 designed to support both types of catalyst with plate catalyst being the specified type.

1 Typically, there are two or three separate catalyst layers in sequence. As part of the
 2 SCR project, catalyst and sorbent injection technology will be installed to mitigate the
 3 SO₂ to SO₃ conversion associated with SCR operation on units that burn high sulfur
 4 coal. Generally the best location to install an SCR within a typical boiler's flue gas
 5 path is upstream of the air heater and downstream of the economizer, as this offers the
 6 optimal temperature window to maximize the effective operational range of the SCR
 7 and generating unit. An example for illustrative purposes is shown below:

Example SCR System for NO_x Control in a Boiler



Graphic Source:
www.epa.gov

8
 9
 10

11 The SCR on Brown 3 will be similar in design to those installed on Ghent 1,
 12 Ghent 3, Ghent 4, Mill Creek 3, Mill Creek 4 and Trimble 1. The Brown 3 SCR will

1 be designed to remove 90% of the NO_x emitted from the boiler at the end of the
2 designed catalyst life when the unit is operating at 60% or greater of its generating
3 capacity.

4 The scope of work consists of the SCR and Balance of Plant scopes such as
5 the ammonia storage and transport systems, new roads to access the ammonia storage
6 area, air heater modifications that include new enamel coated air heater baskets and
7 cleaning system, modifications to the economizer to allow SCR operation at reduced
8 generating loads, plant air system upgrades, installation of a new SO₃ mitigation as
9 well as other miscellaneous paving and site restoration at the end of the project.

10 The Balance of Plant scopes are required to account for the installation of the
11 SCR. The economizer will be modified by removing surface area or by modifying
12 the economizer water system through a water bypass. While either of these
13 modifications will have a slightly negative impact on the unit's heat rate, it is required
14 to provide a larger operating range of the boiler because the SCR requires a minimum
15 of 630 degrees Fahrenheit flue gas temperature for the chemical reduction of NO_x
16 with ammonia.

17 To account for the increased SO₃ caused by the oxidation of SO₂ in the SCR,
18 modification to the air heaters and the installation of a SO₃ mitigation system will be
19 required. This system will be similar to those systems installed in 2008 on Ghent 3,
20 Ghent 4 and Trimble 1. The air heaters will have enamel coated baskets installed
21 and their cleaning systems upgraded to account for the increased sulfuric acid
22 concentrations.

1 **Q. Is KU requesting a CPCN for the SCR at Brown 3 (Project 28)?**

2 A. Yes, as discussed in the testimony of Mr. Bellar, KU is requesting a CPCN for Project
3 28, the construction of an SCR, and supporting systems, on Unit 3 at Brown station.

4 **Q. Why is KU seeking a CPCN for Project 28, the proposed SCR system at Brown**
5 **3?**

6 A. Under a March 17, 2009 consent decree with the EPA, KU is required to install an
7 SCR device for Brown 3 by December 31, 2012 in order to comply with the New
8 Source Review provisions of the Clean Air Act.

9 **Q. Please summarize the Companies experience with the SCR technology.**

10 A. The Companies have been operating and maintaining SCR systems since 2003 and
11 currently have six SCR systems in operation on Ghent 1, Ghent 3, Ghent 4, Mill
12 Creek 3, Mill Creek 4 and Trimble 1. SCR technology is considered BACT for NO_x
13 control and has been an effective and reliable means of reducing NO_x emissions.
14 With the installation of the SCRs, the Companies have successfully complied with all
15 applicable environmental regulations as they operated their generating facilities.

16 **Q. Is this project a cost-effective means of complying with environmental**
17 **regulations and permits?**

18 A. Yes. Mr. Schram's testimony describes the methodologies KU uses to determine the
19 most cost-effective option for complying with environmental regulations. KU's cost
20 evaluation examines compliance with the consent decree. As Mr. Schram describes,
21 the cost evaluation was conducted on two alternatives: construct the SCR or retire
22 Brown 3.

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

24 A. Yes.

John N. Voyles Jr.
Vice President, Transmission and Generation Services
E.ON U.S. LLC
220 West Main Street
Louisville, Kentucky 40202
(502) 627-4762

John Voyles was named to his current position in 2008. He has 33 years of experience in the utility industry.

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 (LaJolla, 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

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

KENTUCKY UTILITIES COMPANY
2009 ENVIRONMENTAL COMPLIANCE PLAN (Case No. 2009-00197)

| Project | Air Pollutant or Waste/By-Product To Be Controlled | Control Facility | Generating Station | Environmental Regulation | Environmental Permit | Actual or Scheduled Completion | Actual (A) or Estimated (E) Projected Capital Cost (\$Million) |
|---------|--|---|--|---|--|--------------------------------|--|
| 28 | NOx | Selective Catalytic Reduction | Brown Unit 3 | Clean Air Act (1990) Brown Unit 3 EPA Consent Decree | Kentucky Division of Air Quality Title V Air Permit Modification | 2012 | \$183.85 (E) |
| 29 | Fly & Bottom Ash, Gypsum | CCP Storage Ash Treatment Basin (Phase II) | Brown Station | 401 KAR Chapter 5 KRS Chapter 151 | Division of Water - KPDES Permit and Dam Construction Permit | 2012 | \$24.86 (E) |
| 30 | Fly & Bottom Ash, Gypsum | CCP Storage Landfill (Phase I) | Ghent Station | 401 KAR Chapter 45 | Division of Waste Management - Landfill Permit | 2013 | \$203.97 (E) |
| 31 | Fly & Bottom Ash, Gypsum | CCP Storage Ash Treatment Basin/Gypsum Storage (See Note 1) | Trimble County Station | 401 KAR Chapter 5 KRS Chapter 151 | Division of Water - KPDES Permit and Dam Construction Permit | 2010 | \$11.84 (E) |
| 32 | Fly & Bottom Ash, Gypsum | CCP Storage Landfill (Phase I) | Trimble County Station | 401 KAR Chapter 5 401 KAR Chapter 45 | Division of Waste Management - Landfill Permit Division of Water - KPDES Permit | 2013 | \$33.86 (E) |
| 33 | Fly & Bottom Ash, Gypsum | Beneficial Reuse | Trimble County Station (see Note 2) | 401 KAR Chapter 45 | Permit-by-rule | 2010 | \$4.17 (E) |
| | | | All Stations (see Note 3) | | | on-going | N/A |

\$462.55

- Note 1: Combined, the KU/LG&E costs account for 75% of the total TC CCP project costs. KU and LG&E's costs split 48% / 52% respectively.
 Note 2: Barge loading facility for fly ash beneficial reuse opportunity
 Note 3: O&M for beneficial reuse opportunities - see Page 2 of 2

KENTUCKY UTILITIES COMPANY
2009 ENVIRONMENTAL COMPLIANCE PLAN (Case No. 2009-00197)

| Project | Air Pollutant or Waste/By-Product To Be Controlled | Control Facility | Generating Station | Estimated Annual Operations and Maintenance Costs (Through 2018) | | | | | | | | |
|---------|---|--|--|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | | | | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| 23 | Fly Ash, NO _x , SO ₂ , SO ₃ , Hg and Particulate | Selective Catalytic Reduction, Dry Electrostatic Precipitator, Pulverized Activated Carbon Injection, Hydrated Lime Injection, Fabric Filter Bag House, Wet Flue Gas Desulfurization, Wet Electrostatic Precipitator | Trimble Co. Unit 2 (See Note 1) | \$ 5,663,169 | \$ 8,860,635 | \$ 10,477,210 | \$ 11,219,570 | \$ 11,519,792 | \$ 11,796,886 | \$ 12,084,001 | \$ 12,438,277 | \$ 12,674,231 |
| 28 | NO _x | Selective Catalytic Reduction | Brown Unit 3 | \$ - | \$ - | \$ 649,267 | \$ 3,122,809 | \$ 3,193,154 | \$ 3,239,641 | \$ 3,335,614 | \$ 3,463,706 | \$ 3,572,886 |
| 29 | Fly & Bottom Ash, Gypsum | CCP Storage Ash Treatment Basin (Phase II) (see Note 2) | Brown Station | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| 30 | Fly & Bottom Ash, Gypsum | CCP Storage Landfill (Phase 1) | Ghent Station | \$ 121,349 | \$ 128,630 | \$ 136,348 | \$ 19,003,308 | \$ 20,143,507 | \$ 21,352,117 | \$ 22,633,244 | \$ 23,991,239 | \$ 25,430,713 |
| 31 | Fly & Bottom Ash, Gypsum | CCP Storage Ash Treatment Basin/Gypsum Storage (See Note 2) | Trimble County Station | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| 32 | Fly & Bottom Ash, Gypsum | CCP Storage Landfill (Phase 1) (See Note 3) | Trimble County Station | \$ - | \$ - | \$ - | \$ 1,050,070 | \$ 1,113,074 | \$ 1,179,859 | \$ 1,250,650 | \$ 1,325,689 | \$ 1,405,230 |
| 33 | Fly & Bottom Ash, Gypsum | Beneficial Reuse | Trimble County Station (see Note 4) | \$ 143,100 | \$ 303,372 | \$ 321,574 | \$ 340,869 | \$ 361,321 | \$ 383,000 | \$ 405,980 | \$ 430,339 | \$ 456,159 |
| | | | Trimble County Station (see Note 4) | \$ 252,000 | \$ 252,000 | \$ 252,000 | \$ 252,000 | \$ 252,000 | \$ 252,000 | \$ 252,000 | \$ 252,000 | \$ 252,000 |
| | | | Ghent Station (see Note 4) | \$ 3,786,868 | \$ 3,867,651 | \$ 1,215,311 | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| | | | All Stations | Note 5 | | | | | | | | |

- Note 1: Combined, the KU/LG&E costs account for 75% of the total TC AQCS O&M costs. KU and LG&E's costs split 81% / 19% respectively.
 Note 2: Brown Ash Treatment Basin expansion and Trimble County Ash Treatment Basin/Gypsum Storage do not incur any incremental O&M costs.
 Note 3: Combined, the KU/LG&E costs account for 75% of the total TC CCP O&M costs. KU and LG&E's costs split 48% / 52% respectively.
 Note 4: O&M for beneficial reuse opportunities
 Note 5: Expenses associated with future beneficial reuse projects will be incurred as opportunities are identified.

Exhibit JNV-2

Due to the voluminous nature of the exhibit,
please see the compact disc included with
this filing.



Due to the voluminous nature of the exhibit,
please see the compact disc included with
this filing.



Due to the voluminous nature of the exhibit,
please see the compact disc included with
this filing.

Due to the voluminous nature of the exhibit,
please see the compact disc included with
this filing.

Exhibit JNV-7

Due to the voluminous nature of the exhibit,
please see the compact disc included with
this filing.

Due to the voluminous nature of the exhibit,
please see the compact disc included with
this filing.

Due to the voluminous nature of the exhibit,
please see the compact disc included with
this filing.

Due to the voluminous nature of the exhibit,
please see the compact disc included with
this filing.

Due to the voluminous nature of the exhibit,
please see the compact disc included with
this filing.

Exhibit JNV-12

Due to the voluminous nature of the exhibit,
please see the compact disc included with
this filing.

Eastern District of Kentucky
FILED

MAR 17 2009

AT LEXINGTON
LESLIE G WHITMER
CLERK U S DISTRICT COURT

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF KENTUCKY
CENTRAL DIVISION
LEXINGTON

UNITED STATES OF AMERICA,

Plaintiff,

v.

KENTUCKY UTILITIES COMPANY,

Defendant.

Civil Action No. 5:07-CV-0075-KSF

CONSENT DECREE

TABLE OF CONTENTS

| | | |
|-------|---|----|
| I. | JURISDICTION AND VENUE..... | 3 |
| II. | APPLICABILITY | 3 |
| III. | DEFINITIONS | 4 |
| IV. | NO _x EMISSION REDUCTIONS..... | 11 |
| | A. NO _x Emission Controls | 11 |
| | B. General NO _x Provisions..... | 11 |
| | C. Use and Surrender of NO _x Allowances | 12 |
| V. | SO ₂ EMISSION REDUCTIONS..... | 15 |
| | A. SO ₂ Emission Controls | 15 |
| | B. General SO ₂ Provisions | 15 |
| | C. Use and Surrender of SO ₂ Allowances..... | 15 |
| VI. | PM EMISSION REDUCTIONS | 17 |
| | A. PM Controls..... | 17 |
| | B. PM Emission Rate | 18 |
| | C. PM Emissions Monitoring..... | 18 |
| | D. Installation and Operation of PM CEMs..... | 19 |
| | E. PM Reporting | 20 |
| VII. | PROHIBITION OF NETTING CREDITS OR OFFSETS | 21 |
| VIII. | ENVIRONMENTAL MITIGATION PROJECTS | 21 |
| IX. | CIVIL PENALTY | 23 |
| X. | RESOLUTION OF CERTAIN CIVIL CLAIMS OF THE UNITED STATES | 24 |
| XI. | PERIODIC REPORTING | 26 |
| XII. | REVIEW AND APPROVAL OF SUBMITTALS..... | 29 |

| | | |
|--------|---|----|
| XIII. | STIPULATED PENALTIES..... | 30 |
| XIV. | FORCE MAJEURE..... | 35 |
| XV. | DISPUTE RESOLUTION..... | 40 |
| XVI. | PERMITS | 42 |
| XVII. | INFORMATION COLLECTION AND RETENTION..... | 45 |
| XVIII. | NOTICES | 46 |
| XIX. | SALES OR TRANSFERS OF OWNERSHIP INTERESTS | 48 |
| XX. | EFFECTIVE DATE | 49 |
| XXI. | RETENTION OF JURISDICTION..... | 49 |
| XXII. | MODIFICATION..... | 50 |
| XXIII. | GENERAL PROVISIONS..... | 50 |
| XXIV. | SIGNATORIES AND SERVICE..... | 52 |
| XXV. | PUBLIC COMMENT..... | 52 |
| XXVI. | CONDITIONAL TERMINATION UNDER DECREE..... | 53 |
| XXVII. | FINAL JUDGMENT..... | 54 |
| | APPENDIX | |

WHEREAS, the United States of America ("the United States"), on behalf of the United States Environmental Protection Agency ("EPA"), has filed a complaint against Kentucky Utilities Company ("Kentucky Utilities") pursuant to Sections 113(b) and 167 of the Clean Air Act ("the Act"), 42 U.S.C. §§ 7413(b) and 7477, for injunctive relief and the assessment of civil penalties for violations of the Prevention of Significant Deterioration ("PSD") provisions of the Act, 42 U.S.C. §§ 7470-92; the New Source Performance Standards ("NSPS") of the Act, 42 U.S.C. § 7411; Title V of the Act, 42 U.S.C. §§ 7661-7661f; and the State Implementation Plan adopted by the Commonwealth of Kentucky and approved by EPA pursuant to Section 110 of the Act, 42 U.S.C. § 7410;

WHEREAS, in its complaint, the United States alleges, *inter alia*, that Kentucky Utilities modified and thereafter operated an electric generating unit at the Brown Power Plant without obtaining the necessary permits or installing and operating the best available control technology to control emissions of nitrogen oxides ("NO_x"), sulfur dioxide ("SO₂"), and/or particulate matter ("PM"), as the Act requires; that Kentucky Utilities modified and thereafter operated this Unit -- Brown Unit 3 -- in a manner that resulted in emissions of NO_x, SO₂, and/or PM in violation of applicable New Source Performance Standards; and that Kentucky Utilities operated Brown Unit 3 at a heat input rate in excess of 4128 million Btus ("MMBtus") per hour, in violation of a condition contained in the plant's operating permit;

WHEREAS, Kentucky Utilities sought and obtained, on March 1, 2005, a Title V operating permit that removed the 4128 MMBtu per hour heat input rate as an enforceable limit at Brown Unit 3 without going through the appropriate permitting procedures, including PSD review;

WHEREAS, the United States' complaint alleges claims upon which relief can be granted against Kentucky Utilities under Sections 113 and 167 of the Act, 42 U.S.C. §§ 7413 & 7477;

WHEREAS, the United States provided Kentucky Utilities and the Commonwealth of Kentucky with actual notice of alleged violations in accordance with Section 113(a)(1) of the Act, 42 U.S.C. § 7413(a)(1), and provided notice of the commencement of suit to the Commonwealth of Kentucky as required by Section 113(b) of the Act, 42 U.S.C. § 7413(b);

WHEREAS, the United States and Kentucky Utilities (collectively, the "Parties") have agreed that settlement of this action is in the best interest of the Parties and in the public interest, and that entry of this Consent Decree without litigation is the most appropriate means of resolving this matter;

WHEREAS, the Parties recognize, and the Court by entering this Consent Decree finds, that this Consent Decree has been negotiated in good faith and at arm's length and that this Consent Decree is fair, reasonable, consistent with the goals of the Act, and in the public interest;

WHEREAS, the actions to be taken and the emission reductions to be achieved by Kentucky Utilities under this Consent Decree are for purposes of resolving the claims alleged by the United States, and are undertaken by Kentucky Utilities as part of its efforts to achieve compliance with the Clean Air Act at Brown Unit 3;

WHEREAS, Kentucky Utilities denies the allegations in the complaint and maintains that it has been and remains in compliance with the Act and is not liable for

civil penalties or injunctive relief, and nothing herein shall constitute an admission of liability;

WHEREAS, the Parties have consented to entry of this Consent Decree without trial of any issues;

NOW, THEREFORE, without any admission of fact or law, it is hereby ORDERED, ADJUDGED, AND DECREED as follows:

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over this action, the subject matter herein, and the Parties, pursuant to 28 U.S.C. §§ 1331, 1345, 1355, and 1367, and pursuant to Sections 111, 113 and 167 of the Act, 42 U.S.C. §§ 7411, 7413 and 7477. Venue is proper under Section 113(b) of the Act, 42 U.S.C. § 7413(b), and under 28 U.S.C. § 1391(b) and (c). Kentucky Utilities consents to, and shall not challenge, entry of this Consent Decree and this Court's jurisdiction to enter and enforce this Consent Decree. Except as expressly provided for herein, this Consent Decree shall not create any rights in any party other than the Parties to this Consent Decree. Except as provided in Section XXV (Public Comment) of this Consent Decree, the Parties consent to entry of this Consent Decree without further notice.

II. APPLICABILITY

2. Upon entry, the provisions of this Consent Decree shall apply to and be binding upon and inure to the benefit of the United States and Kentucky Utilities, and their successors and assigns, and upon their officers, employees, and agents, solely in their capacities as such.

3. Kentucky Utilities shall provide a copy of the pertinent provisions of this Consent Decree to all vendors, suppliers, consultants, contractors, and agents, and to any

other company or other organization retained to perform any of the work required by this Consent Decree. Notwithstanding any retention of contractors, subcontractors, or agents to perform any work required under this Consent Decree, Kentucky Utilities shall be responsible for ensuring that all work is performed in accordance with the requirements of this Consent Decree. In any action to enforce this Consent Decree, Kentucky Utilities shall not assert as a defense the failure of their officers, directors, employees, servants, agents, or contractors to take actions necessary to comply with this Consent Decree, unless Kentucky Utilities establishes that such failure resulted from a Force Majeure Event, as defined in Section XIV of this Consent Decree.

III. DEFINITIONS

4. Every term expressly defined by this Consent Decree shall have the meaning given to that term by this Consent Decree and, except as otherwise provided in this Consent Decree, every other term used in this Consent Decree that is also a term under the Act or the regulations implementing the Act shall mean in this Consent Decree what such term means under the Act or those implementing regulations.

“30-Day Rolling Average Emission Rate” shall be expressed in lb/MMBtu and calculated in accordance with the following procedure: (1) sum the total pounds of NO_x or SO₂ emitted from the Unit during the current Operating Day and the previous twenty-nine (29) Operating Days; (2) sum the total heat input to the Unit in MMBtu during the current Operating Day and the previous twenty-nine (29) Operating Days; and (3) divide the total number of pounds of NO_x or SO₂ emitted during the thirty (30) Operating Days by the total heat input during the thirty (30) Operating Days. A new “30-Day Rolling Average Emission Rate” for NO_x and for SO₂ shall be calculated for each new Operating Day. Except as provided for in this definition and in Paragraphs 76 through 78

(Malfunction), each 30-Day Rolling Average Emission Rate for NO_x or SO₂ shall include all emissions that occur during all periods within each Operating Day: (i) Kentucky Utilities may exclude emissions that occur during a period of Malfunction from the calculation of the 30-Day Rolling Average Emission Rate for NO_x or SO₂ if Kentucky Utilities meets the requirements of Paragraphs 76 and 77; (ii) Kentucky Utilities may exclude emissions during start up(s) of Brown Unit 3 following a major outage or during the commissioning of new equipment; provided, however, that this start up exclusion may not occur more frequently than once every five (5) calendar years and the excluded period may not exceed five (5) consecutive Days.

“30-Day Rolling Average SO₂ Removal Efficiency” means the percent reduction in the mass of SO₂ achieved by the Unit’s Flue Gas Desulfurization (“FGD”) system over a 30-Operating Day period and shall be calculated as follows: (1) sum the total pounds of SO₂ emitted from the Unit during the current Operating Day and the previous twenty-nine (29) Operating Days as measured at the outlet of the FGD system for the Unit; (2) sum the total pounds of SO₂ delivered to the inlet of the FGD system for the Unit during the current Operating Day and the previous twenty-nine (29) Operating Days as measured at the inlet to the FGD system for that Unit (this shall be calculated by measuring the ratio of the lb/MMBtu SO₂ inlet to the lb/MMBtu SO₂ outlet and multiplying the outlet pounds of SO₂ by that ratio); (3) subtract the outlet SO₂ emissions calculated in step one from the inlet SO₂ emissions calculated in step two; (4) divide the remainder calculated in step three by the inlet SO₂ emissions calculated in step two; and (5) multiply the quotient calculated in step four by 100 to express as a percentage of removal efficiency. A new 30-Day Rolling Average SO₂ Removal Efficiency shall be calculated for each new

Operating Day. Except as provided for in Paragraphs 76 through 78 (Malfunction), each 30-Day Rolling Average Removal Efficiency for SO₂ shall include all emissions that occur during all periods within each Operating Day. Kentucky Utilities may exclude emissions that occur during a period of Malfunction from the calculation of the 30-Day Rolling Average Removal Efficiency for SO₂ if Kentucky Utilities meets the requirements of Paragraphs 76 and 77.

"Brown Power Plant" means Units 1, 2 and 3 of the E.W. Brown Power Station located in Mercer County, Kentucky.

"Brown Unit 3" means Unit 3 of the Brown Power Plant.

"Business Day" shall mean any Day other than Saturday, Sunday, or a federally recognized holiday.

"CEMS" or "Continuous Emission Monitoring System," means, for obligations involving NO_x and SO₂ under this Consent Decree, the devices defined in 40 C.F.R. § 72.2, the inlet SO₂ lb/MMBtu monitors, and the computer system for recording, calculating, and storing data and equations required by this Consent Decree.

"Clean Air Act" or "Act" means the federal Clean Air Act, 42 U.S.C. §§ 7401-7671q, and its implementing regulations.

"Commonwealth" means the Commonwealth of Kentucky.

"Consent Decree" or "Decree" means this Consent Decree.

"Continuously Operate" or "Continuous Operation" means that when an emission control device, such as a SCR, low NO_x burner, over-fire air, FGD, or ESP, is used at Brown Unit 3, such control device shall be operated at all times the Unit is in operation, except during a Malfunction of such control device, consistent with the technological

limitations, manufacturers' specifications, and good engineering and maintenance practices for such device and the Unit so as to minimize emissions to the extent practicable.

"Day" means calendar day, unless otherwise specified as a Business Day.

"Emission Rate" for a given pollutant means the number of pounds of that pollutant emitted per million British thermal units of heat input (lb/MMBtu), measured in accordance with this Consent Decree.

"EPA" means the United States Environmental Protection Agency.

"ESP" means an electrostatic precipitator, which is a pollution control device for the reduction of particulate matter.

"FGD" means Flue Gas Desulfurization System, which is a pollution control device that employs flue gas desulfurization technology, including an absorber utilizing lime, flyash, or limestone slurry for the reduction of sulfur dioxide emissions.

"Fossil Fuel" means any hydrocarbon fuel, including coal, petroleum coke, petroleum oil, or natural gas.

"Kentucky Utilities" means the defendant, Kentucky Utilities Company.

"lb/MMBtu" means one pound of a pollutant per million British thermal units of heat input.

"Malfunction" means malfunction as that term is defined under 40 C.F.R. § 60.2.

"MW" means a megawatt or one million Watts.

"NO_x" means oxides of nitrogen, measured in accordance with the provisions of this Consent Decree.

"NO_x Allowance" means an authorization or credit to emit a specified amount of NO_x during the Ozone Season that is allocated or issued by Kentucky. This definition shall not apply to any allowance issued by Kentucky related to programs authorizing emissions of NO_x on an annual basis notwithstanding that such annual allowance includes the right to emit NO_x during the Ozone Season.

"Operating Day" means any calendar day on which the Unit fires fossil fuel.

"Ownership Interest" means part or all of Kentucky Utilities' legal or equitable ownership interest in Brown Unit 3.

"Ozone Season" shall mean the period beginning May 1st and ending September 30th of any calendar year.

"Parties" means the United States and Kentucky Utilities Company. "Party" means one of the named "Parties."

"PM" means total filterable particulate matter, measured in accordance with the provisions of this Consent Decree.

"Prevention of Significant Deterioration" or "PSD" means the prevention of significant deterioration of air quality program under Part C of Subchapter I of the Clean Air Act, 42 U.S.C. §§ 7470-7492, and 40 C.F.R. Part 52.

"Project Dollars" means Kentucky Utilities' expenditures and payments incurred or made in carrying out the Environmental Mitigation Projects identified in Section VIII (Environmental Mitigation Projects) of this Consent Decree to the extent that such expenditures or payments both: (a) comply with the requirements set forth in Section VIII (Environmental Mitigation Projects) and Appendix A of this Consent Decree, and (b)

constitute Kentucky Utilities' direct payments for such projects, or Kentucky Utilities' external costs for contractors, vendors, and equipment.

"SCR" means selective catalytic reduction system, which is a pollution control device that employs selective catalytic reduction technology for the reduction of NO_x emissions.

"SO₂" means sulfur dioxide, measured in accordance with the provisions of this Consent Decree.

"SO₂ Allowance" means "allowance" of SO₂ as defined at 42 U.S.C. § 7651a(3): "an authorization, allocated to an affected Unit by the Administrator of EPA under Subchapter IV of the Act, to emit, during or after a specified calendar year, one ton of sulfur dioxide."

"Surrender" means, with regard to SO₂ and NO_x Allowances, complying with the procedures set forth herein so that such Allowances can never be used to meet any compliance requirement under the Clean Air Act or a state implementation plan.

"Surplus NO_x Allowance" means any NO_x Allowance issued by Kentucky for Brown Unit 3 that Kentucky Utilities does not need to meet the federal and/or state Clean Air Act regulatory requirements for that Unit during the Ozone Season. The number of NO_x Allowances that are surplus to Kentucky Utilities' Clean Air Act NO_x Allowance holding requirements shall be equal to the amount by which the NO_x Allowances allocated to Brown Unit 3 for a particular Ozone Season are greater than the total amount of NO_x emissions from that Unit for the same Ozone Season.

"Title V Permit" means the permit required of Kentucky Utilities' Brown Power Plant under Subchapter V of the Act, 42 U.S.C. §§ 7661-7661e.

"Unit" means, for the purposes of this Consent Decree, collectively, at Brown Unit 3, the Brown Unit 3 coal crusher, stationary equipment that feeds coal to the boiler, the boiler that produces steam for the steam turbine, the steam turbine, the generator, the equipment necessary to operate the generator, steam turbine and boiler, and all ancillary equipment, including pollution control equipment and systems necessary for the production of electricity. An electric utility steam generating station may comprise one or more Units.

"Unit Annual NO_x Tonnage Limitation" means the limitation, as specified in this Consent Decree, on the total number of tons of NO_x emitted from Brown Unit 3 during the relevant calendar year (*i.e.*, January 1 through December 31). Compliance with the Unit Annual NO_x Tonnage Limitation shall be calculated for each new calendar year and such calculation shall include all NO_x emitted from Brown Unit 3 as reported in the electronic data reports required under Title IV of the Clean Air Act during all periods of operation during the relevant calendar year.

"Unit Annual SO₂ Tonnage Limitation" means the limitation, as specified in this Consent Decree, on the total number of tons of SO₂ emitted from Brown Unit 3 during the relevant calendar year (*i.e.*, January 1 through December 31). Compliance with the Unit Annual SO₂ Tonnage Limitation shall be calculated for each new calendar year and such calculation shall include all SO₂ emitted from Brown Unit 3 as reported in the electronic data reports required under Title IV of the Clean Air Act during all periods of operation during the relevant calendar year.

IV. NO_x EMISSION REDUCTIONS

A. NO_x Emission Controls

5. By no later than December 31, 2012, Kentucky Utilities shall install an SCR at Brown Unit 3.

6. Beginning no later than December 31, 2012, Kentucky Utilities shall commence Continuous Operation of the SCR so as to achieve and thereafter maintain at Brown Unit 3 a 30-Day Rolling Average Emission Rate for NO_x of no greater than 0.070 lb/MMBtu, except as provided in Paragraph 7 of this Consent Decree.

7. Beginning no later than December 31, 2012, during any 30-Day period used to calculate a 30-Day Rolling Average Emission Rate for NO_x, if the dispatch of Brown Unit 3 requires the operation of Brown Unit 3 at a load level that results in flue gas temperature so low that it becomes technically infeasible to Continuously Operate the SCR, despite best efforts by Kentucky Utilities to do so, Kentucky Utilities shall achieve and maintain at Brown Unit 3 a 30-Day Rolling Average Emission Rate for NO_x of no greater than 0.080 lbs/MMBtu.

8. Beginning thirty (30) days from entry of this Consent Decree, Kentucky Utilities shall Continuously Operate the existing low NO_x burners and over-fire air at Brown Unit 3.

9. During calendar years 2009 through 2012, Kentucky Utilities shall not exceed a Unit Annual NO_x Tonnage Limitation at Brown Unit 3 of 4,072 tons of NO_x per calendar year.

B. General NO_x Provisions

10. In determining emission rates for NO_x, Kentucky Utilities shall use CEMS in accordance with the reference methods specified in 40 C.F.R. Part 75, except that NO_x

emissions data need not be bias-adjusted. At least one hundred eighty (180) days prior to commencing operation of the SCR, and no later than June 30, 2012, Kentucky Utilities shall submit to EPA for review and approval, a plan for the placement and installation of NO_x CEMS at Brown Unit 3 for the purpose of measuring NO_x emissions from only Brown Unit 3, and not Brown Units 1 and 2. Kentucky Utilities shall install and commence continuous operation of such CEMS within one hundred twenty (120) days of receiving EPA's approval of the plan.

C. Use and Surrender of NO_x Allowances

11. Except as may be necessary to comply with Section XIII (Stipulated Penalties), Kentucky Utilities shall not use NO_x Allowances to comply with any requirement of this Consent Decree, including compliance with any emission limitation, by using, tendering, or otherwise applying NO_x Allowances to achieve compliance or offset any emissions above the limits specified in this Consent Decree.

12. Except as provided in this Consent Decree, Kentucky Utilities shall not sell, trade, or transfer any NO_x Allowances allocated to Brown Unit 3 that would otherwise be available for sale, trade, or transfer as a result of the actions taken by Kentucky Utilities to comply with the requirements of this Consent Decree. The NO_x Allowances allocated to Brown Unit 3 may be used by Kentucky Utilities only to meet its own federal and/or state Clean Air Act regulatory requirements for that Unit.

13. For each calendar year beginning with calendar year 2009 and continuing through calendar year 2020, Kentucky Utilities shall surrender to EPA, or transfer to a non-profit third party as provided herein, Surplus NO_x Allowances, except as provided in Paragraph 17. Kentucky Utilities shall surrender such Surplus NO_x Allowances within sixty (60) days of the end of each calendar year.

14. For all Surplus NO_x Allowances required to be surrendered to EPA, Kentucky Utilities or the third-party recipient(s) (as the case may be) shall first submit a NO_x Allowance transfer request form to EPA's Office of Air and Radiation's Clean Air Markets Division directing the transfer of such Surplus NO_x Allowances to the EPA Enforcement Surrender Account or to any other EPA account that EPA may direct in writing. As part of submitting these transfer requests, Kentucky Utilities or the third-party recipient(s) shall irrevocably authorize the transfer of these Surplus NO_x Allowances and identify – by name of account and any applicable serial or other identification numbers or station names – the source and location of the Surplus NO_x Allowances being surrendered.

15. If any Surplus NO_x Allowances required to be surrendered under this Consent Decree are transferred to a non-profit third party, Kentucky Utilities shall include a description of such transfer in the next report submitted to EPA pursuant to Section XI (Periodic Reporting) of this Consent Decree. Such report shall: (a) provide the identity of the non-profit third party recipient(s) of the Surplus NO_x Allowances and a listing of the serial numbers of the transferred Surplus NO_x Allowances; and (b) include a certification by the third-party recipient(s) stating that the recipient(s) will not sell, trade, or otherwise exchange any of the allowances and will not use any of the Surplus NO_x Allowances to meet any obligation imposed by any environmental law. No later than the third periodic report due after the transfer of any Surplus NO_x Allowances, Kentucky Utilities shall include a statement that the third-party recipient(s) surrendered the Surplus NO_x Allowances for permanent surrender to EPA in accordance with the provisions of Paragraph 14 within one year after Kentucky Utilities transferred the Surplus NO_x

Allowances to them. Kentucky Utilities shall not have complied with the Surplus NO_x Allowance surrender requirements of this Paragraph until all third-party recipient(s) shall have actually surrendered the transferred Surplus NO_x Allowances to EPA.

16. The requirements in this Consent Decree pertaining to Kentucky Utilities' use and surrender of Ozone Season NO_x Allowances (Paragraphs 11, 12, 13, 14, 15 and 17) are permanent injunctions that are not subject to any termination provision of this Consent Decree, and shall survive any termination of this Consent Decree as long as Kentucky continues to allocate NO_x Allowances for the Ozone Season. This Paragraph and the requirements in Paragraphs 11, 12, 13, 14, 15 and 17 shall not apply to any future emissions trading program involving only annual NO_x limits and/or annual NO_x allowances.

17. Nothing in this Consent Decree shall preclude Kentucky Utilities from selling or transferring NO_x Allowances allocated to Brown Unit 3 that become available for sale or trade solely as a result of the achievement and maintenance of a NO_x emission rate below a 30-Day Rolling Average Emission Rate for NO_x of 0.070 lb/MMBtu. Kentucky Utilities must timely report the generation of such super-compliant NO_x Allowances in accordance with Section XI (Periodic Reporting) of this Consent Decree.

18. Nothing in this Consent Decree shall prevent Kentucky Utilities from purchasing or otherwise obtaining NO_x Allowances from another source for purposes of complying with state or federal Clean Air Act requirements to the extent otherwise allowed by law.

V. SO₂ EMISSION REDUCTIONS

A. SO₂ Emission Controls

19. Beginning no later than December 31, 2010, Kentucky Utilities shall install a FGD at Brown Unit 3.

20. Beginning no later than December 31, 2010, Kentucky Utilities shall commence Continuous Operation of the FGD so as to achieve and thereafter maintain a 30-Day Rolling Average Emission Rate for SO₂ of no greater than 0.100 lb/MMBtu or a 30-Day Rolling Average SO₂ Removal Efficiency of not lower than 97%.

21. During calendar years 2009 and 2010, Kentucky Utilities shall not exceed a Unit Annual SO₂ Tonnage Limitation at Brown Unit 3 of 31,998 tons of SO₂ per calendar year.

22. Beginning with calendar year 2011, and continuing annually on a calendar year basis thereafter, Kentucky Utilities shall not exceed a Unit Annual SO₂ Tonnage Limitation at Brown Unit 3 of 2,300 tons of SO₂ per calendar year.

B. General SO₂ Provisions

23. In determining Emission Rates and Removal Efficiencies for SO₂, Kentucky Utilities shall use CEMS in accordance with those reference methods specified in 40 C.F.R. Part 75. Inlet pounds of SO₂ will be calculated as described in the definition of 30-Day Rolling Average SO₂ Removal Efficiency.

C. Use and Surrender of SO₂ Allowances

24. Except as may be necessary to comply with Section XIII (Stipulated Penalties), Kentucky Utilities shall not use SO₂ Allowances to comply with any requirement of this Consent Decree, including compliance with any emission limitation,

by using, tendering, or otherwise applying SO₂ Allowances to achieve compliance or offset any emissions above the limits specified in this Consent Decree.

25. By March 1, 2009, or thirty (30) days after entry of the Consent Decree, whichever is later, Kentucky Utilities shall permanently surrender to EPA, or transfer to a non-profit third party, a total of 53,000 SO₂ Allowances of 2008 or earlier vintage.

26. If any SO₂ Allowances required to be surrendered under this Consent Decree are transferred directly to a non-profit third party, Kentucky Utilities shall include a description of such transfer in the next report submitted to EPA pursuant to Section XI (Periodic Reporting) of this Consent Decree. Such report shall: (i) provide the identity of the non-profit third party recipient(s) of the SO₂ Allowances and a listing of the serial numbers of the transferred SO₂ Allowances; and (ii) include a certification by the third party recipient(s) stating that the recipient(s) will not sell, trade, or otherwise exchange any of the allowances and will not use any of the SO₂ Allowances to meet any obligation imposed by any environmental law. No later than the third periodic report due after the transfer of any SO₂ Allowances, Kentucky Utilities shall include a statement that the third party recipient(s) surrendered the SO₂ Allowances for permanent surrender to EPA in accordance with the provisions of Paragraph 27 within one year after Kentucky Utilities transferred the SO₂ Allowances to them. Kentucky Utilities shall not have complied with the SO₂ Allowance surrender requirements of this Paragraph until all third party recipient(s) shall have actually surrendered the transferred SO₂ Allowances to EPA.

27. For all SO₂ Allowances surrendered to EPA, Kentucky Utilities or the third party recipient(s) (as the case may be) shall first submit an SO₂ Allowance transfer request form to EPA's Office of Air and Radiation's Clean Air Markets Division

directing the transfer of such SO₂ Allowances to the EPA Enforcement Surrender Account or to any other EPA account that EPA may direct in writing. As part of submitting these transfer requests, Kentucky Utilities or the third party recipient(s) shall irrevocably authorize the transfer of these SO₂ Allowances and identify – by name of account and any applicable serial or other identification numbers or station names – the source and location of the SO₂ Allowances being surrendered.

28. Nothing in this Consent Decree shall prevent Kentucky Utilities from purchasing or otherwise obtaining SO₂ Allowances from another source for purposes of complying with state or federal Clean Air Act requirements to the extent otherwise allowed by law.

VI. PM EMISSION REDUCTIONS

A. PM Controls

29. Beginning thirty (30) days after entry of this Consent Decree, and continuing thereafter, Kentucky Utilities shall Continuously Operate the ESP at Brown Unit 3 to maximize PM emission reductions at all times when the Unit is in operation, provided that such operation of the ESP is consistent with the technological limitations, manufacturer's specifications and good engineering and maintenance practices for the ESP. Except as required during correlation testing under 40 C.F.R. Part 60, Appendix B, Performance Specification 11, and Quality Assurance Requirements under Appendix F, Procedure 2, as required by this Consent Decree, Kentucky Utilities shall, at a minimum:

- (a) fully energize each section of the ESP;
- (b) operate automatic control systems on the ESP, including the plate-cleaning and discharge electrode cleaning systems, to maximize PM collection efficiency;
- (c) maintain power levels delivered to the ESP, consistent with manufacturers' specifications, the operational design of the Unit, and good engineering

practices; and (d) inspect the ESP for any openings or leakage in ESP casings, ductwork, and expansion joints, and make repairs to any section of the ESP needing repair during the next scheduled or unscheduled outage.

B. PM Emission Rate

30. No later than December 31, 2010, and continuing thereafter, Kentucky Utilities shall Continuously Operate the ESP at Brown Unit 3 to achieve a PM Emission Rate no greater than 0.030 lb/MMBtu. Compliance with the 0.030 lbs/MMBtu emission rate shall be demonstrated by stack tests in accordance with Paragraphs 31-32.

C. PM Emissions Monitoring

31. Beginning in calendar year 2011, and continuing in each calendar year thereafter, Kentucky Utilities shall conduct a stack test for PM on the common stack servicing Brown Unit 3 at least one time each calendar year, with each stack test conducted at least six (6) months apart. The stack test requirement imposed by this Paragraph may be satisfied by stack tests conducted by Kentucky Utilities as required by its permits held for Brown Unit 3 for any year that such stack tests are required under the permits.

32. The reference methods and procedures for determining compliance with PM Emission Rates shall be those specified in 40 C.F.R. Part 60, Appendix A, Method 5, 5B, or 17, or an alternative method requested for use by Kentucky Utilities, and approved for use herein by EPA. The alternative method must conform to the EPA requirements specified in 40 C.F.R. Part 60, Appendix A and 40 C.F.R. § 60.50Da, or any federally-approved method contained in the Kentucky State Implementation Plan. Each test shall consist of three separate runs performed under representative operating conditions not including periods of startup, shutdown, or Malfunction. The sampling time for each run

shall be at least 120 minutes and the volume of each run shall be 1.70 dry standard cubic meters (60 dry standard cubic feet). Kentucky Utilities shall calculate the PM Emission Rates from the stack test results in accordance with 40 C.F.R. § 60.8(f), and shall report the results of each PM stack test to EPA within forty-five (45) days of completion of each test.

D. Installation and Operation of PM CEMS

33. Kentucky Utilities shall install, correlate, operate, and maintain a PM CEMS at the common stack servicing Brown Unit 3, as specified below. The PM CEMS shall be comprised of (a) a continuous particle mass monitor that measures particulate matter concentrations, directly or indirectly, on an hourly average basis and (b) a CO₂ diluent monitor used to convert the concentration to units of lb/MMBtu. Kentucky Utilities shall maintain, in an electronic database, the hourly average emission values produced by the PM CEMS in lb/MMBtu. Kentucky Utilities shall use best efforts to keep the PM CEMS running and producing data whenever Brown Unit 3 is in operation. All periods of monitor malfunction, maintenance or repair shall be noted as such in the electronic database.

34. At least two hundred seventy (270) days prior to commencing operation of PM CEMS as set forth in Paragraph 35, and no later than September 30, 2010, Kentucky Utilities shall submit to EPA pursuant to Section XII (Review and Approval of Submittals) of this Consent Decree: (a) a plan for the installation and certification of a PM CEMS, and (b) a proposed Quality Assurance/Quality Control ("QA/QC") protocol that Kentucky Utilities shall follow in correlating the PM CEMS. In developing both the plan for installation and certification of the PM CEMS and the QA/QC protocol, Kentucky Utilities shall use the criteria set forth in 40 C.F.R. Part 60, Appendix B,

Performance Specification 11, and Appendix F, Procedure 2. Following approval by EPA of the protocol, Kentucky Utilities shall thereafter operate each PM CEMS in accordance with the approved protocol.

35. Within one hundred eighty (180) calendar days following commencement of operation of the FGD, Kentucky Utilities shall install, correlate, maintain, and operate a PM CEMS on the Unit, in accordance with the PM CEMS installation plan and QA/QC protocol approved by EPA pursuant to the preceding Paragraph. No later than ninety (90) days after Kentucky Utilities begins operation of the PM CEMS, Kentucky Utilities shall conduct performance specification tests of the PM CEMS to demonstrate compliance with the PM CEMS installation and certification plan submitted to and approved by EPA in accordance with Section XII (Review and Approval of Submittals) and shall report such information to EPA no later than forty-five (45) days after such tests.

E. PM Reporting

36. Following the installation of the PM CEMS, Kentucky Utilities shall report to EPA, pursuant to Section XI (Periodic Reporting), the data recorded by the PM CEMS in the common stack for Brown Units 1, 2 and 3, expressed in electronic format in lb/MMBtu on a 6-hour and 24-hour rolling average basis.

37. Although stack tests shall be used for demonstrating compliance with the PM Emission Rate imposed by this Consent Decree, nothing in this Consent Decree is intended to, or shall, alter or waive any applicable law, including but not limited to any defenses, entitlements, challenges, or clarifications related to the Credible Evidence Rule, 62 Fed. Reg. 8314 (Feb. 24, 1997), concerning the use of data for any purpose under the Act.

VII. PROHIBITION ON NETTING CREDITS OR OFFSETS

38. Emission reductions that result from actions to be taken by Kentucky Utilities after entry of this Consent Decree to comply with the requirements of this Consent Decree shall not be considered as a creditable contemporaneous emission decrease for the purpose of obtaining a netting credit or offset under the Clean Air Act's Nonattainment NSR and PSD programs.

39. The limitation on the generation and use of netting credits or offsets set forth in the previous Paragraph does not apply to emission reductions achieved by Brown Unit 3 that are greater than those required under this Consent Decree. For purposes of this Paragraph, emission reductions from Brown Unit 3 are greater than those required under this Consent Decree if they result from Kentucky Utilities' compliance with federally enforceable emission rates or removal efficiencies that are more stringent than those limits imposed on Brown Unit 3 under this Consent Decree and under applicable provisions of the Clean Air Act and the Kentucky State Implementation Plan.

40. Nothing in this Consent Decree is intended to preclude the emission reductions generated under this Consent Decree from being considered by the Commonwealth of Kentucky or EPA as creditable contemporaneous emission decreases for the purpose of attainment demonstrations submitted pursuant to § 110 of the Act, 42 U.S.C. § 7410, or in determining impacts on NAAQS, PSD increment, or air quality related values, including visibility, in a Class I area.

VIII. ENVIRONMENTAL MITIGATION PROJECTS

41. Kentucky Utilities shall implement the Environmental Mitigation Projects ("Projects") described in Appendix A to this Consent Decree in compliance with the approved plans and schedules for such Project and other terms of this Consent Decree.

42. Kentucky Utilities shall submit plans for each of the Projects to EPA for review and approval pursuant to Section XII (Review and Approval of Submittals) of this Consent Decree in accordance with the schedules set forth in Appendix A to this Consent Decree. In implementing the Projects, Kentucky Utilities shall spend no less than \$3,000,000. Kentucky Utilities shall maintain, and present to EPA upon request, all documents to substantiate the Project Dollars expended and shall provide these documents to EPA within thirty (30) days of a request by EPA for such documentation.

43. All plans and reports prepared by Kentucky Utilities pursuant to the requirements of this Section of the Consent Decree and required to be submitted to EPA shall be publicly available from Kentucky Utilities without charge.

44. Kentucky Utilities shall certify, as part of each plan submitted to EPA for any Project, that Kentucky Utilities is not otherwise required by law to perform the Project described in the plan, that Kentucky Utilities is unaware of any other person who is required by law to perform the Project, and that Kentucky Utilities will not use any Project, or portion thereof, to satisfy any obligations that it may have under other applicable requirements of law.

45. Kentucky Utilities shall use good faith efforts to secure as much environmental benefit as possible for the Project Dollars expended, consistent with the applicable requirements and limits of this Consent Decree.

46. If Kentucky Utilities elects (where such an election is allowed) to undertake a Project by contributing funds to another person or entity that will carry out the Project in lieu of Kentucky Utilities, but not including Kentucky Utilities' agents or contractors, that person or instrumentality must, in writing: (a) identify its legal authority

for accepting such funding; and (b) identify its legal authority to conduct the Project for which Kentucky Utilities contributes the funds. Regardless of whether Kentucky Utilities elected (where such election is allowed) to undertake a Project by itself or to do so by contributing funds to another person or instrumentality that will carry out the Project, Kentucky Utilities acknowledges that it will receive credit for the expenditure of such funds only if Kentucky Utilities demonstrates that the funds have been actually spent by either Kentucky Utilities or by the person or instrumentality receiving them, and that such expenditures met all requirements of this Consent Decree.

47. Beginning six (6) months after entry of this Consent Decree, and continuing until completion of each Project (including any applicable periods of demonstration or testing), Kentucky Utilities shall provide EPA with semi-annual updates concerning the progress of each Project.

48. Within sixty (60) days following the completion of each Project required under this Consent Decree (including any applicable periods of demonstration or testing), Kentucky Utilities shall submit to EPA a report that documents the date that the Project was completed, Kentucky Utilities' results of implementing the Project, including the emission reductions or other environmental benefits achieved, and the total Project Dollars expended by Kentucky Utilities in implementing the Project.

IX. CIVIL PENALTY

49. Within thirty (30) calendar days after entry of this Consent Decree, Kentucky Utilities shall pay to the United States a civil penalty in the amount of \$1,400,000. The civil penalty shall be paid by Electronic Funds Transfer ("EFT") to the United States Department of Justice, in accordance with current EFT procedures, referencing USAO File No. 2007V00233, DOJ Case No. 90-5-1-1-07915, and the civil

action case name and case number of this action. The costs of such EFT shall be Kentucky Utilities' responsibility. Payment shall be made in accordance with instructions provided to Kentucky Utilities by the Financial Litigation Unit of the U.S. Attorney's Office for the Eastern District of Kentucky. Any funds received after 2:00 p.m. EDT shall be credited on the next Business Day. At the time of payment, Kentucky Utilities shall provide notice of payment, referencing the USAO File Number, the DOJ Case Number, and the civil action case name and case number, to the Department of Justice and to EPA in accordance with Section XVIII (Notices) of this Consent Decree.

50. Failure to timely pay the civil penalty shall subject Kentucky Utilities to interest accruing from the date payment is due until the date payment is made at the rate prescribed by 28 U.S.C. § 1961, and shall render Kentucky Utilities liable for all charges, costs, fees, and penalties established by law for the benefit of a creditor or of the United States in securing payment.

51. Payments made pursuant to this Section are penalties within the meaning of Section 162(f) of the Internal Revenue Code, 26 U.S.C. § 162(f), and are not tax-deductible expenditures for purposes of federal law.

X. RESOLUTION OF CERTAIN CIVIL CLAIMS OF THE UNITED STATES

52. Entry of this Decree shall resolve all civil claims of the United States against Kentucky Utilities that arose from any modifications commenced at Brown Unit 3 prior to the Date of Lodging of this Consent Decree, including but not limited to those modifications alleged in the United States' Complaint in this civil action and in the Notices of Violation issued to Kentucky Utilities on April 25, 2006, and December 5, 2006, under:

- a. Sections 502(a) and 504(a) of Title V of the Clean Air Act, 42 U.S.C §§ 7611(a) and 7611(c), but only to the extent that such claims are based on (i) Kentucky Utilities' failure to obtain an operating permit that reflects applicable requirements imposed under Parts C or D of Subchapter I, or Section 111 of the Clean Air Act, and (ii) Kentucky Utilities' operation of Brown Unit 3 at a heat input in excess of the value listed in the July 20, 1993 Brown Unit 3 Operating Permit No. O-86-068 (Revision 2) and its March 1, 2005 Brown Power Plant Title V permit No. V-03-034;
- b. Parts C or D of Subchapter I of the Clean Air Act, 42 U.S.C. §§ 7470-7492, 7501-7515, including any claims arising from deletion of enforceable heat input limits listed in the July 20, 1993 Brown Unit 3 Operating Permit No. O-86-068 (Revision 2) from Kentucky Utilities' March 1, 2005 Brown Power Plant Title V permit No. V-03-034;
- c. Section 111 of the Clean Air Act, 42 U.S.C. § 7411, and 40 C.F.R. § 60.14;
- d. 401 KAR 51:017 and all relevant prior versions of these regulations, including any claims arising from deletion of enforceable heat input limits listed in the July 20, 1993 Brown Unit 3 Operating Permit No. O-86-068 (Revision 2) from Kentucky Utilities' March 1, 2005 Brown Power Plant Title V permit No. V-03-034; and

- e. 401 KAR 52.020 and all relevant prior versions of these regulations, but only to the extent that such claims are based on (i) Kentucky Utilities' failure to obtain an operating permit that reflects applicable requirements imposed under Parts C or D of Subchapter I, or Section 111 of the Clean Air Act, and (ii) Kentucky Utilities' operation of Brown Unit 3 at a heat input in excess of the value listed in the July 20, 1993 Brown Unit 3 Operating Permit No. O-86-068 (Revision 2) and its March 1, 2005 Brown Power Plant Title V permit No. V-03-034.

XI. PERIODIC REPORTING

53. Compliance Report. After entry of this Decree, Kentucky Utilities shall submit to EPA a semi-annual report, within sixty (60) days after the end of each half of the calendar year (January through June and July through December). The report shall include the following:

- a. Information, including milestone dates, regarding the design and installation of the FGD and the SCR required under this Consent Decree, including any problems encountered or anticipated, together with implemented or proposed solutions;
- b. Any information indicating that the installation or commencement of operation of a pollution control device might be delayed, including the nature and cause of the delay, and any steps taken by Kentucky Utilities to mitigate such delay;
- c. Beginning with the first report filed after June 30, 2013, information to demonstrate compliance with the 30-Day Rolling

Average Emission Rate for NO_x during the preceding six-month reporting period;

- d. Beginning with the first report filed after June 30, 2013, information identifying the amount of time, if any, during the preceding six-month reporting period in which the dispatch of Brown Unit 3 requires operation of Brown Unit 3 at a load level that results in flue gas temperature so low that it becomes technically infeasible to Continuously Operate the SCR;
- e. Beginning with the first report filed after June 30, 2011, information to demonstrate compliance with the 30-Day Rolling Average Emission Rate for SO₂ or 30-Day Rolling Average SO₂ Removal Efficiency during the preceding six-month reporting period;
- f. Beginning December 31, 2011, for each semi-annual report submitted after the end of a calendar year, information to demonstrate compliance with the Unit Annual SO₂ Tonnage Limitation in Paragraph 22 during the preceding calendar year;
- g. For the first semi-annual report to be submitted under this Consent Decree, and continuing annually thereafter, demonstration of the surrender of all SO₂ and NO_x allowances required to be surrendered under this Consent Decree, as well as any supercompliant NO_x allowances;

- h. All data recorded by the PM CEMs in the common stack for Brown Units 1, 2 and 3 as required by Paragraph 36, including data, if any, from all periods of monitor malfunction, maintenance, or repair as provided in Paragraph 33; and
- i. All other information necessary to determine compliance with the requirements of this Consent Decree.

54. Deviations Report. In addition to the reports required by the previous Paragraph, if Kentucky Utilities violates or deviates from any provision of this Consent Decree, Kentucky Utilities shall submit to the United States a report on the violation or deviation within ten Business Days after Kentucky Utilities knew or should have known of the event. In the report, Kentucky Utilities shall explain the cause or causes of the violation or deviation and any measures taken or to be taken by Kentucky Utilities to cure the reported violation or deviation or to prevent such violation or deviations in the future. For PM emissions measured by PM CEMS, the requirements of this Paragraph shall be satisfied by compliance with the reporting requirements set forth in Paragraph 36.

55. Each Kentucky Utilities report shall be signed by Kentucky Utilities' Director, Environmental Affairs, or his or her equivalent or designee of at least the rank of Vice President, and shall contain the following certification:

This information was prepared either by me or under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my evaluation, or the direction and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, I hereby certify under penalty of law that, to the best of my knowledge and belief, this information is true, accurate, and complete. I understand that there are significant penalties for

submitting false, inaccurate, or incomplete information to the United States.

56. If any allowances are surrendered to any third party pursuant to Section IV.C (Use and Surrender of NO_x Allowances) or V.C (Use and Surrender of SO₂ Allowances), the third party's certification shall be signed by a managing officer of the third party, and shall contain the following language:

I certify under penalty of law that _____ [name of third party] will not sell, trade, or otherwise exchange any of the allowances and will not use any of the allowances to meet any obligation imposed by any environmental law. I understand that there are significant penalties for making misrepresentations to or misleading the United States.

XII. REVIEW AND APPROVAL OF SUBMITTALS

57. Kentucky Utilities shall submit to EPA each submission required to be submitted by Kentucky Utilities for review or approval. EPA may approve the submittal or decline to approve it and provide written comments explaining the bases for declining such approval. Within sixty (60) days of receiving written comments from EPA, Kentucky Utilities shall either: (a) revise the submittal consistent with the written comments and provide the revised submittal to EPA; or (b) submit the matter for dispute resolution, including the period of informal negotiations, under Section XV (Dispute Resolution) of this Consent Decree.

58. Upon receipt of EPA's final approval of the submittal, or upon completion of the submittal pursuant to dispute resolution, Kentucky Utilities shall implement the approved submittal in accordance with the schedule specified therein.

XIII. STIPULATED PENALTIES

59. For any failure by Kentucky Utilities to comply with the terms of this Consent Decree, and subject to the provisions of Sections XIV (Force Majeure) and XV (Dispute Resolution), Kentucky Utilities shall pay, within thirty (30) days after receipt of written demand to Kentucky Utilities by the United States, the following stipulated penalties to the United States:

| Consent Decree Violation | Stipulated Penalty |
|--|--------------------------------|
| a. Failure to pay the civil penalty as specified in Section X (Civil Penalty) of this Consent Decree | \$10,000 per Day |
| b. Failure to comply with any applicable 30-Day Rolling Average Emission Rate for NO _x , where the violation is less than 5% in excess of the limit set forth in this Consent Decree | \$2,500 per Day per violation |
| c. Failure to comply with any applicable 30-Day Rolling Average Emission Rate for NO _x , where the violation is equal to or greater than 5% but less than 10% in excess of the limit set forth in this Consent Decree | \$5,000 per Day per violation |
| d. Failure to comply with any applicable 30-Day Rolling Average Emission Rate for NO _x , where the violation is equal to or greater than 10% in excess of the limit set forth in this Consent Decree | \$10,000 per Day per violation |
| e. Failure to comply with any applicable 30-Day Rolling Average Removal Efficiency or 30-Day Rolling Average Emission Rate for SO ₂ where the violation is less than 5% in excess of the 30-Day Rolling Average Emission Rate for SO ₂ or is less than 5% below the 30-Day Rolling Average Removal Efficiency for SO ₂ in this Consent Decree | \$2,500 per Day per violation |

| Consent Decree Violation | Stipulated Penalty |
|--|--|
| <p>f. Failure to comply with any applicable 30-Day Rolling Average Removal Efficiency or 30-Day Rolling Average Emission Rate for SO₂ where the violation is more than 5% but less than 10% in excess of the 30-Day Rolling Average Emission Rate for SO₂ or is more than 5% but less than 10% below the 30-Day Rolling Average Removal Efficiency for SO₂ in this Consent Decree</p> | <p>\$5,000 per Day per violation</p> |
| <p>g. Failure to comply with any applicable 30-Day Rolling Average Removal Efficiency or 30-Day Rolling Average Emission Rate for SO₂ where the violation is greater than 10% in excess of the 30-Day Rolling Average Emission Rate for SO₂ or is greater than 10% below the 30-Day Rolling Average Removal Efficiency for SO₂ in this Consent Decree</p> | <p>\$10,000 per Day per violation</p> |
| <p>h. Failure to comply with the Unit-Specific Annual Tonnage Limitation for SO₂ for Brown Unit 3</p> | <p>The surrender of SO₂ Allowances in an amount equal to four times the number of tons by which the limitation was exceeded</p> |
| <p>i. Failure to install, commence operation, or continue operation of the NO_x or SO₂ pollution control devices on any Unit as required under this Consent Decree</p> | <p>\$10,000 per Day per violation during the first 30 days; \$32,500 per Day per violation thereafter</p> |
| <p>j. Failure to install or operate CEMS as required in this Consent Decree</p> | <p>\$1,000 per Day per violation</p> |
| <p>k. Failure to apply for any permit required by Section XVI (Permits).</p> | <p>\$1,000 per Day per violation</p> |
| <p>l. Failure to timely submit, modify, or implement, as approved, the reports, plans, studies, analyses, protocols, or other submittals required by this Consent Decree</p> | <p>\$750 per Day per violation during the first ten days, \$1,000 per Day per violation thereafter</p> |

| Consent Decree Violation | Stipulated Penalty |
|--|---|
| m. Failure to surrender NO _x Allowances as required by this Consent Decree | (a) \$32,500 per Day plus (b) \$1,000 per NO _x Allowance not surrendered, and \$5,000 per NO _x Allowance for each NO _x Allowance used, sold, or transferred in violation of this Consent Decree |
| n. Failure to surrender SO ₂ Allowances as required by this Consent Decree | (a) \$32,500 per Day plus (b) \$1,000 per SO ₂ Allowance not surrendered, and \$5,000 per SO ₂ Allowance for each SO ₂ Allowance used, sold, or transferred in violation of this Consent Decree. |
| o. Failure to demonstrate the third-party surrender of a NO _x Allowance or SO ₂ Allowance in accordance with this Consent Decree | \$2,500 per Day per violation |
| p. Failure to undertake and complete an Environmental Mitigation Project in accordance with this Consent Decree | \$1,000 per Day per violation during the first 30 days, \$5,000 per Day per violation thereafter |
| q. Any other violation of this Consent Decree | \$1,000 per Day per violation |

60. Violation of any limit based on a 30-Day Rolling Average constitutes thirty (30) days of violation, but where such a violation of the same pollutant recurs at Brown Unit 3 within a period of less than thirty (30) days, Kentucky Utilities shall not be obligated to pay a daily stipulated penalty for any Day of the recurrence for which a stipulated penalty has already been paid.

61. All stipulated penalties shall begin to accrue on the Day after the performance is due or on the Day a violation occurs, whichever is applicable, and shall continue to accrue until performance is satisfactorily completed or until the violation ceases, whichever is applicable. Nothing in this Consent Decree shall prevent the simultaneous accrual of separate stipulated penalties for separate violations of this Consent Decree.

62. Kentucky Utilities shall pay all stipulated penalties to the United States within thirty (30) days of receipt of written demand to Kentucky Utilities from the United States, and shall continue to make such payments every thirty (30) days thereafter until the violation(s) no longer continues, unless Kentucky Utilities elects, within twenty days of receipt of written demand for stipulated penalties from the United States, to dispute the accrual of stipulated penalties in accordance with the provisions in Section XV (Dispute Resolution) of this Consent Decree.

63. Stipulated penalties shall continue to accrue as provided in accordance with Paragraph 61 and this Paragraph 63 during any dispute, with interest on accrued stipulated penalties payable and calculated at the rate established by the Secretary of the Treasury, pursuant to 28 U.S.C. § 1961, but need not be paid until the following:

- a. If the dispute is resolved by agreement, or by a decision of United States pursuant to Section XV (Dispute Resolution) of this Consent Decree that is not appealed to this Court, Kentucky Utilities shall pay all accrued stipulated penalties agreed or determined to be owing, together with accrued interest, within thirty (30) days of the

effective date of the agreement or of the receipt of the United States' decision;

- b. If the dispute is appealed to this Court, and the United States prevails in whole or in part, Kentucky Utilities shall pay all accrued stipulated penalties determined by this Court to be owing, together with interest accrued on such penalties determined by this Court to be owing, within sixty (60) days of receipt of the Court's decision or order, except as provided in Subparagraph 63.c, below;
- c. If the Court's decision is appealed by any Party, Kentucky Utilities shall pay all accrued stipulated penalties determined by the appellate court to be owing, together with interest accrued on such stipulated penalties determined to be owing, within fifteen (15) days of receipt of the final appellate court decision.

Notwithstanding any other provision of this Consent Decree, the accrued stipulated penalties agreed by the United States and Kentucky Utilities, or determined by the United States through Dispute Resolution, to be owing may be less than the stipulated penalty amounts set forth in Paragraph 59.

64. All monetary stipulated penalties shall be paid in the manner set forth in Section IX (Civil Penalty) of this Consent Decree. All allowance surrender penalties shall comply with the allowance surrender procedures set forth in this Consent Decree.

65. Should Kentucky Utilities fail to pay stipulated penalties in compliance with the terms of this Consent Decree, the United States shall be entitled to collect interest on such penalties, as provided for in 28 U.S.C. § 1961.

66. The stipulated penalties provided for in this Consent Decree shall be in addition to any other rights, remedies, or sanctions available to the United States by reason of Kentucky Utilities' failure to comply with any requirement of this Consent Decree or applicable law, except that for any violation of the Act for which this Consent Decree provides for payment of a stipulated penalty, Kentucky Utilities shall be allowed a credit for stipulated penalties paid against any statutory penalties also imposed for such violation.

XIV. FORCE MAJEURE

67. For purposes of this Consent Decree, a "Force Majeure Event" shall mean an event that has been or will be caused by circumstances beyond the control of Kentucky Utilities, its contractors, or any entity controlled by Kentucky Utilities, that delays compliance with any provision of this Consent Decree or otherwise causes a violation of any provision of this Consent Decree, despite Kentucky Utilities' best efforts to fulfill the obligation. "Best efforts to fulfill the obligation" include using best efforts to anticipate any potential Force Majeure Event and to address the effects of any such event (a) as it is occurring and (b) after it has occurred, such that the delay or violation is minimized to the greatest extent possible.

68. Notice of Force Majeure Events. If any event occurs or has occurred that may delay compliance with or otherwise cause a violation of any obligation under this Consent Decree as to which Kentucky Utilities intends to assert a claim of Force Majeure, Kentucky Utilities shall notify the United States in writing as soon as practicable, but in no event later than twenty-one (21) Business Days following the date Kentucky Utilities first knew, or by the exercise of due diligence should have known, that the event caused or may cause such delay or violation. In this notice, Kentucky Utilities

shall reference this Paragraph of this Consent Decree and describe the anticipated length of time that the delay or violation may persist, the cause or causes of the delay or violation, all measures taken or to be taken by Kentucky Utilities to prevent or minimize the delay or violation, the schedule by which Kentucky Utilities proposes to implement those measures, and Kentucky Utilities' rationale for attributing a delay or violation to a Force Majeure Event. Kentucky Utilities shall adopt all reasonable measures to avoid or minimize such delays or violations. Kentucky Utilities shall be deemed to know of any circumstance which Kentucky Utilities, its contractors, or any entity controlled by Kentucky Utilities knew or should have known.

69. Failure to Give Notice. If Kentucky Utilities fails to comply with the notice requirements of this Section, the United States may void Kentucky Utilities' claim for Force Majeure as to the specific event for which Kentucky Utilities has failed to comply with such notice requirement.

70. United States' Response. EPA shall notify Kentucky Utilities in writing regarding Kentucky Utilities' claim of Force Majeure within twenty Business Days of receipt of the notice provided under Paragraph 68. If the United States agrees that a delay in performance has been or will be caused by a Force Majeure Event, then the United States and Kentucky Utilities shall stipulate to an extension of deadline(s) for performance of the affected compliance requirement(s) by a period equal to the delay actually caused by the event. In such circumstances, the Parties shall make an appropriate modification of the deadline(s) pursuant to Section XXII (Modification) of this Consent Decree.

71. Disagreement. If the United States does not accept Kentucky Utilities' claim of Force Majeure, or if EPA and Kentucky Utilities cannot agree on the length of the delay actually caused by the Force Majeure Event, the matter shall be resolved in accordance with Section XV (Dispute Resolution) of this Consent Decree.

72. Burden of Proof. In any dispute regarding Force Majeure, Kentucky Utilities shall bear the burden of proving that any delay in performance or any other violation of any requirement of this Consent Decree was caused by or will be caused by a Force Majeure Event. Kentucky Utilities shall also bear the burden of proving that Kentucky Utilities gave the notice required by this Section and the burden of proving the anticipated duration and extent of any delay attributable to a Force Majeure Event. An extension of one compliance date based on a particular event may, but will not necessarily, result in an extension of a subsequent compliance date.

73. Events Excluded. Unanticipated or increased costs or expenses associated with the performance of Kentucky Utilities' obligations under this Consent Decree shall not constitute a Force Majeure Event.

74. Potential Force Majeure Events. The Parties agree that, depending upon the circumstances related to an event and Kentucky Utilities' response to such circumstances, the kinds of events listed below are among those that could qualify as Force Majeure Events within the meaning of this Section: construction, labor, or equipment delays; Malfunction of a Unit or emission control device; acts of God; acts of war or terrorism; and orders by a government official, government agency, other regulatory authority, or a regional transmission organization, acting under and authorized by applicable law, that requires Kentucky Utilities to supply electricity in response to a

state-wide or regional emergency. Depending upon the circumstances and Kentucky Utilities' response to such circumstances, failure of a permitting authority to issue a necessary permit in a timely fashion may constitute a Force Majeure Event where the failure of the permitting authority to act is beyond the control of Kentucky Utilities and Kentucky Utilities has taken all steps available to it to obtain the necessary permit, including, but not limited to: submitting a complete permit application; responding to requests for additional information by the permitting authority in a timely fashion; and accepting lawful permit terms and conditions after expeditiously exhausting any legal rights to appeal terms and conditions imposed by the permitting authority.

75. As part of the resolution of any matter submitted to this Court under Section XV (Dispute Resolution) of this Consent Decree regarding a claim of Force Majeure, the United States and Kentucky Utilities by agreement, or this Court by order, may in appropriate circumstances extend or modify the schedule for completion of work under this Consent Decree to account for the delay in the work that occurred as a result of any delay agreed to by the United States and the States or approved by the Court. Kentucky Utilities shall be liable for stipulated penalties for its failure thereafter to complete the work in accordance with the extended or modified schedule (provided that Kentucky Utilities shall not be precluded from making a further claim of Force Majeure with regard to meeting any such extended or modified schedule).

76. Malfunction Events. If Kentucky Utilities proposes to exclude emissions during a period of Malfunction from the calculation of any 30-Day Rolling Average Emission Rate or 30-Day Rolling Average SO₂ Removal Efficiency, Kentucky Utilities shall notify the United States in writing as soon as practicable, but in no event later than

twenty-one (21) days following the date the Malfunction occurs. In this notice, Kentucky Utilities shall describe the anticipated length of time that the Malfunction may persist, the cause or causes of the Malfunction, all measures taken or to be taken by Kentucky Utilities to minimize the duration of the Malfunction, and the schedule by which Kentucky Utilities proposes to implement those measures. Kentucky Utilities shall adopt all reasonable measures to minimize the duration of such Malfunctions, and to prevent the recurrence of such Malfunctions in the future.

77. Kentucky Utilities may exclude NO_x and SO₂ emissions data during a period of Malfunction, after approval from EPA pursuant to Paragraph 78, from calculation of the 30-Day Rolling Average Emission Rate for NO_x or SO₂ or the 30-Day Rolling Average Removal Efficiency for SO₂, only if, in the notice required pursuant to Paragraph 76, Kentucky Utilities demonstrates that:

a. The Malfunction did not result from the failure of Kentucky Utilities to properly operate and maintain the equipment that experienced the Malfunction;

b. Kentucky Utilities took all reasonable steps to correct, as expeditiously as practicable, the condition causing the emissions to exceed the 30-Day Rolling Average Emission Rate for NO_x or SO₂ or 30-Day Rolling Average Removal Efficiency for SO₂;

c. Kentucky Utilities took all reasonable steps to minimize emissions and their effect on air quality resulting from the Malfunction;

d. The excess emissions are not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

e. The Malfunction was not caused entirely or in part by poor maintenance, careless operation, or any other preventable upset conditions or equipment breakdown.

78. EPA shall notify Kentucky Utilities of its determination of whether emissions during the period of Malfunction may be excluded from calculation of the 30-Day Rolling Average Emission Rate for NO_x or SO₂ or the 30-Day Rolling Average Removal Efficiency for SO₂ as soon as practicable, but no later than sixty (60) days after the date that all information required by Paragraphs 76 and 77 has been submitted.

79. A Malfunction does not constitute a Force Majeure Event unless the Malfunction also meets the definition of a Force Majeure Event, as provided in this Section. Conversely, a period of Malfunction may be excluded by Kentucky Utilities from the calculations of emission rates and removal efficiencies, as allowed under this Paragraph, regardless of whether the Malfunction constitutes a Force Majeure Event.

XV. DISPUTE RESOLUTION

80. The dispute resolution procedure provided by this Section shall be available to resolve all disputes arising under this Consent Decree, provided that the Party invoking such procedure has first made a good faith attempt to resolve the matter with the other Party.

81. The dispute resolution procedure required herein shall be invoked by one Party giving written notice to the other Party advising of a dispute pursuant to this Section. The notice shall describe the nature of the dispute and shall state the noticing Party's position with regard to such dispute. The Party receiving such a notice shall acknowledge receipt of the notice, and the Parties in dispute shall expeditiously schedule a meeting to discuss the dispute informally not later than twenty (20) Business Days following receipt of such notice.

82. Disputes submitted to dispute resolution under this Section shall, in the first instance, be the subject of informal negotiations among the disputing Parties. Such

period of informal negotiations shall not extend beyond thirty (30) Days from the date of the first meeting among the disputing Parties' representatives unless they agree in writing to shorten or extend this period. During the informal negotiations period, the disputing Parties may also submit their dispute to a mutually agreed upon alternative dispute resolution ("ADR") forum if the Parties agree that the ADR activities can be completed within the thirty (30) Day informal negotiations period (or such longer period as the Parties may agree to in writing).

83. If the disputing Parties are unable to reach agreement during the informal negotiation period, the United States shall provide Kentucky Utilities with a written summary of its position regarding the dispute. The written position provided by the United States shall be considered binding unless, within forty-five (45) Days thereafter, Kentucky Utilities seeks judicial resolution of the dispute by filing a petition with the Court. The United States may respond to the petition within forty-five (45) Days of filing.

84. The time periods set out in this Section may be shortened or lengthened upon motion to the Court of one of the Parties to the dispute, explaining the party's basis for seeking such a scheduling modification.

85. The Court shall not draw any inferences nor establish any presumptions adverse to any disputing Party as a result of invocation of this Section or the disputing Parties' inability to reach agreement.

86. As part of the resolution of any dispute under this Section, in appropriate circumstances the disputing Parties may agree, or the Court may order, an extension or modification of the schedule for the completion of the activities required under this

Consent Decree to account for the delay that occurred as a result of dispute resolution. Kentucky Utilities shall be liable for stipulated penalties for its failure thereafter to complete the work in accordance with the extended or modified schedule, provided that Kentucky Utilities not be precluded from asserting that a Force Majeure Event has caused or may cause a delay in complying with the extended or modified schedule.

87. The Court shall decide all disputes pursuant to applicable principles of law for resolving such disputes. In their initial filings with the Court, the disputing Parties shall state their respective positions as to the applicable standard of law for resolving the particular dispute.

XVI. PERMITS

88. Unless expressly stated otherwise in this Consent Decree, in any instance where otherwise applicable law or this Consent Decree requires Kentucky Utilities to secure a permit to authorize construction or operation of any device contemplated herein, including all preconstruction, construction, and operating permits required under state law, Kentucky Utilities shall make such application in a timely manner. Kentucky Utilities shall provide Notice to the United States under Section XVIII (Notices), that Kentucky Utilities has submitted an application for Brown Unit 3 for any permit described in this Paragraph.

89. Notwithstanding the previous Paragraph, nothing in this Consent Decree shall be construed to require Kentucky Utilities to apply for or obtain a PSD or Nonattainment NSR permit for physical changes in, or changes in the method of operation of Kentucky Utilities that would give rise to claims resolved by Section X, Paragraph 52 (Resolution of Certain Civil Claims of the United States) of this Consent Decree.

90. When permits are required as described in this Section, Kentucky Utilities shall complete and submit applications for such permits to the appropriate authorities to allow time for all legally required processing and review of the permit request, including requests for additional information by the permitting authorities. Any failure by Kentucky Utilities to submit a timely permit application for Brown Unit 3 shall bar any use by Kentucky Utilities of Section XIV (Force Majeure) of this Consent Decree, where a Force Majeure claim is based on permitting delays.

91. Notwithstanding the reference to Title V permits in this Consent Decree, the enforcement of such permits shall be in accordance with their own terms and the Act. The Title V permits shall not be enforceable under this Consent Decree, although any term or limit established by or under this Consent Decree shall be enforceable under this Consent Decree regardless of whether such term has or will become part of a Title V permit, subject to the terms of Section XXVI (Conditional Termination of Enforcement Under Decree) of this Consent Decree.

92. Within one hundred eighty (180) days after entry of this Consent Decree, or at the time that Kentucky Utilities submits its Brown Plant Title V permit application to renew the existing Title V permit that will expire on March 1, 2010, whichever is later, Kentucky Utilities shall apply to permanently include a federally-enforceable numerical hourly heat input rate limitation for Brown Unit 3 of no greater than 5300 MMBtu/hr in the Brown Plant Title V permit, such that the hourly heat input rate limitation becomes and remains an "applicable requirement" as that term is defined in 40 C.F.R. § 70.2. Kentucky Utilities shall state in its application that it shall measure compliance with the heat input limitation by calculating hourly heat input rates using hourly mass coal burned

data and weekly composite fuel sampling analysis data collected for Brown Unit 3. EPA will use best efforts to expeditiously review such application submitted by Kentucky Utilities and will not object to amendment or renewal of Kentucky Utilities' Title V permit based on that application to include, in accordance with this Paragraph, that heat input rate as the federally enforceable heat input limit for Brown Unit 3.

93. Within one-hundred eighty (180) days after entry of this Consent Decree, or at the time that Kentucky Utilities submits its Brown Plant Title V permit application to renew the existing Title V permit that will expire on March 1, 2010, whichever is later, Kentucky Utilities shall amend any applicable Title V permit application, or apply for amendments of its Title V permit, to include a schedule for all unit-specific and plant-specific performance, operational, maintenance, and control technology requirements established by this Consent Decree including, but not limited to, required emission rates, removal efficiencies, the Unit Annual Tonnage Limitations for SO₂ and NO_x, and the requirements pertaining to the use and surrender of NO_x Allowances.

94. Within one (1) year from the commencement of operation of the final pollution control device to be installed on the Unit under this Consent Decree, Kentucky Utilities shall apply to permanently include the requirements and limitations enumerated in this Consent Decree into a federally-enforceable permit, such that the requirements and limitations become and remain "applicable requirements" as that term is defined in 40 C.F.R. § 70.2. The permit shall require compliance with the following: (a) any applicable 30-Day Rolling Average Emission Rate; (b) any applicable 30-Day Rolling Average SO₂ Removal Efficiency; (c) the Unit Annual SO₂ Tonnage Limitation set forth in Paragraph

22 of this Consent Decree; and (d) the NO_x Allowance restrictions set forth in this Consent Decree.

95. Kentucky Utilities shall provide EPA with a copy of each application to amend its Title V permit for Brown Unit 3, as well as a copy of any permit proposed as a result of such application, to allow for timely participation in any public comment opportunity.

96. If Kentucky Utilities sells or transfers to an entity unrelated to Kentucky Utilities ("Third Party Purchaser") part or all of its Ownership Interest in the Brown Plant, Kentucky Utilities shall comply with the requirements of Section XIX (Sales or Transfers of Ownership Interests) with regard to that Unit prior to any such sale or transfer unless, following any such sale or transfer, Kentucky Utilities remains the holder of the Title V permit for such facility.

XVII. INFORMATION COLLECTION AND RETENTION

97. Any authorized representative of the United States, including their attorneys, contractors, and consultants, upon presentation of credentials, shall have a right of entry upon the premises of the Brown Power Plant at any reasonable time for the purpose of:

- a. monitoring the progress of activities required under this Consent Decree;
- b. verifying any data or information submitted to the United States in accordance with the terms of this Consent Decree;
- c. obtaining samples and, upon request, splits of any samples taken by Kentucky Utilities or its representatives, contractors, or consultants; and

d. assessing Kentucky Utilities' compliance with this Consent Decree.

98. Kentucky Utilities shall retain, and instruct its contractors and agents to preserve, all non-identical copies of all records and documents (including records and documents in electronic form) now in its or its contractors' or agents' possession or control, and that directly relate to Kentucky Utilities' performance of its obligations under this Consent Decree until December 31, 2017. This record retention requirement shall apply regardless of any corporate document retention policy to the contrary.

99. All information and documents submitted by Kentucky Utilities pursuant to this Consent Decree shall be subject to any requests under applicable law providing public disclosure of documents unless (a) the information and documents are subject to legal privileges or protection or (b) Kentucky Utilities claims and substantiates in accordance with 40 C.F.R. Part 2 that the information and documents contain confidential business information.

100. Nothing in this Consent Decree shall limit the authority of the EPA to conduct tests and inspections at Kentucky Utilities' facilities under Section 114 of the Act, 42 U.S.C. § 7414, or any other applicable federal or state laws, regulations or permits.

XVIII. NOTICES

101. Unless otherwise provided herein, whenever notifications, submissions, or communications are required by this Consent Decree, they shall be made in writing and addressed as follows:

As to the United States of America:

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611, Ben Franklin Station
Washington, D.C. 20044-7611
DJ# 90-5-2-1-06837

and

Director, Air Enforcement Division
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
Ariel Rios Building [2242A]
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

and

Director
Air, Pesticides and Toxics Management Division
U.S. EPA- Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303-8960

As to Kentucky Utilities:

General Counsel
E.ON U.S. LLC
220 West Main Street
Louisville, KY 40202

William Bumpers
Baker Botts LLP
The Warner
1299 Pennsylvania Avenue, N.W.
Washington, DC 20004

102. All notifications, communications or submissions made pursuant to this Section shall be sent either by: (a) overnight mail or overnight delivery service, or (b) certified or registered mail, return receipt requested. All notifications, communications and transmissions (a) sent by overnight, certified or registered mail shall be deemed

submitted on the date they are postmarked, or (b) sent by overnight delivery service shall be deemed submitted on the date they are delivered to the delivery service.

103. Any Party may change either the notice recipient or the address for providing notices to it by serving all other Parties with a notice setting forth such new notice recipient or address.

XIX. SALES OR TRANSFERS OF OWNERSHIP INTERESTS

104. If Kentucky Utilities proposes to sell or transfer an Ownership Interest to a Third Party Purchaser, Kentucky Utilities shall advise the Third Party Purchaser in writing of the existence of this Consent Decree prior to such sale or transfer, and shall send a copy of such written notification to the United States pursuant to Section XVIII (Notices) of this Consent Decree at least sixty (60) Days before such proposed sale or transfer.

105. No sale or transfer of an Ownership Interest shall take place before the Third Party Purchaser and the United States have executed, and the Court has approved, a modification pursuant to Section XXII (Modification) of this Consent Decree making the Third Party Purchaser a party to this Consent Decree, jointly and severally liable with Kentucky Utilities for all the requirements of this Decree that may be applicable to the transferred or purchased Ownership Interest.

106. This Consent Decree shall not be construed to impede the transfer of any Ownership Interest between Kentucky Utilities and any Third Party Purchaser so long as the requirements of this Consent Decree are met. This Consent Decree shall not be construed to prohibit a contractual allocation – as between Kentucky Utilities and any Third Party Purchaser of Ownership Interests – of the burdens of compliance with this Decree, provided that both Kentucky Utilities and such Third Party Purchaser shall

remain jointly and severally liable to the United States for the obligations of the Decree applicable to the transferred or purchased Ownership Interest.

107. If the United States agrees, then the United States, Kentucky Utilities, and the Third Party Purchaser that has become a party to this Consent Decree pursuant to Paragraph 105, may execute a modification that relieves Kentucky Utilities of its liability under this Consent Decree for, and makes the Third Party Purchaser liable for, all obligations and liabilities applicable to the purchased or transferred Ownership Interest. Notwithstanding the foregoing, however, Kentucky Utilities may not assign, and may not be released from, any obligation under this Consent Decree that is not specific to the purchased or transferred Ownership Interest, including the obligations set forth in Sections VIII (Environmental Mitigation Projects) and IX (Civil Penalty). Kentucky Utilities may propose and the United States may agree to restrict the scope of the joint and several liability of any purchaser or transferee for any obligations of this Consent Decree that are not specific to the transferred or purchased Ownership Interest, to the extent such obligations may be adequately separated in an enforceable manner.

XX. EFFECTIVE DATE

108. The effective date of this Consent Decree shall be the date upon which this Consent Decree is entered by the Court.

XXI. RETENTION OF JURISDICTION

109. The Court shall retain jurisdiction of this case after entry of this Consent Decree to enforce compliance with the terms and conditions of this Consent Decree and to take any action necessary or appropriate for its interpretation, construction, execution, modification, or adjudication of disputes. During the term of this Consent Decree, any

Party to this Consent Decree may apply to the Court for any relief necessary to construe or effectuate this Consent Decree.

XXII. MODIFICATION

110. The terms of this Consent Decree may be modified only by a subsequent written agreement signed by the United States and Kentucky Utilities. Where the modification constitutes a material change to any term of this Decree, it shall be effective only upon approval by the Court.

XXIII. GENERAL PROVISIONS

111. This Consent Decree is not a permit. Compliance with the terms of this Consent Decree does not guarantee compliance with all applicable federal, state, or local laws or regulations. The emission rates set forth herein do not relieve Kentucky Utilities from any obligation to comply with other state and federal requirements under the Clean Air Act, including Kentucky Utilities' obligation to satisfy any state modeling requirements set forth in the Kentucky State Implementation Plan.

112. This Consent Decree does not apply to any claims of criminal liability.

113. In any subsequent administrative or judicial action initiated by the United States for injunctive relief or civil penalties relating to the facilities covered by this Consent Decree, Kentucky Utilities shall not assert any defense or claim based upon principles of waiver, res judicata, collateral estoppel, issue preclusion, claim preclusion, or claim splitting, or any other defense based upon the contention that the claims raised by the United States in the subsequent proceeding were brought, or should have been brought, in the instant case; provided, however, that nothing in this Paragraph is intended to affect the validity of Section X (Resolution of Certain Civil Claims of the United States).

114. Nothing in this Consent Decree shall relieve Kentucky Utilities of its obligation to comply with all applicable federal, state, and local laws and regulations. Subject to the provisions in Section X (Resolution of Certain Civil Claims of the United States), nothing contained in this Consent Decree shall be construed to prevent or limit the rights of the United States to obtain penalties or injunctive relief under the Act or other federal, state, or local statutes, regulations, or permits.

115. Nothing in this Consent Decree is intended to, or shall, alter or waive any applicable law (including but not limited to any defenses, entitlements, challenges, or clarifications related to the Credible Evidence Rule, 62 Fed. Reg. 8314 (Feb. 24, 1997)) concerning the use of data for any purpose under the Act.

116. Each limit and/or other requirement established by or under this Decree is a separate, independent requirement.

117. Performance standards, emissions limits, and other quantitative standards set by or under this Consent Decree must be met to the number of significant digits in which the standard or limit is expressed. For example, an Emission Rate of 0.100 is not met if the actual Emission Rate is 0.101. Kentucky Utilities shall round the fourth significant digit to the nearest third significant digit, or the third significant digit to the nearest second significant digit, depending upon whether the limit is expressed to three or two significant digits. For example, if an actual Emission Rate is 0.1004, that shall be reported as 0.100, and shall be in compliance with an Emission Rate of 0.100, and if an actual Emission Rate is 0.1005, that shall be reported as 0.101, and shall not be in compliance with an Emission Rate of 0.100. Kentucky Utilities shall report data to the number of significant digits in which the standard or limit is expressed.

118. This Consent Decree does not limit, enlarge or affect the rights of any Party to this Consent Decree as against any third parties.

119. This Consent Decree constitutes the final, complete and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Consent Decree, and supersedes all prior agreements and understandings among the Parties related to the subject matter herein. No document, representation, inducement, agreement, understanding, or promise constitutes any part of this Decree or the settlement it represents, nor shall they be used in construing the terms of this Consent Decree.

120. Each Party to this action shall bear its own costs and attorneys' fees.

XXIV. SIGNATORIES AND SERVICE

121. Each undersigned representative of the Parties certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind to this document the Party he or she represents.

122. This Consent Decree may be signed in counterparts, and such counterpart signature pages shall be given full force and effect.

123. Each Party hereby agrees to accept service of process by mail with respect to all matters arising under or relating to this Consent Decree and to waive the formal service requirements set forth in Rule 4 of the Federal Rules of Civil Procedure and any applicable Local Rules of this Court including, but not limited to, service of a summons.

XXV. PUBLIC COMMENT

124. The Parties agree and acknowledge that final approval by the United States and entry of this Consent Decree is subject to the procedures of 28 C.F.R. § 50.7, which provides for notice of the lodging of this Consent Decree in the Federal Register,

an opportunity for public comment, and the right of the United States to withdraw or withhold consent if the comments disclose facts or considerations which indicate that the Consent Decree is inappropriate, improper or inadequate. Kentucky Utilities shall not oppose entry of this Consent Decree by this Court or challenge any provision of this Consent Decree unless the United States has notified Kentucky Utilities, in writing, that the United States no longer supports entry of the Consent Decree.

XXVI. CONDITIONAL TERMINATION UNDER DECREE

125. Termination as to Completed Tasks. As soon as Kentucky Utilities completes a construction project or any other requirement of this Consent Decree that is not ongoing or recurring, Kentucky Utilities may, by motion to this Court, seek termination of the provision or provisions of this Consent Decree that imposed the requirement.

126. Conditional Termination of Enforcement Through the Consent Decree.

After Kentucky Utilities:

a. has successfully completed construction, and has maintained operation, of all pollution controls as required by this Consent Decree for at least two (2) years; and

b. has obtained a final Title V permit (i) as required by the terms of this Consent Decree; (ii) that covers Brown Unit 3; and (iii) that include as applicable requirements all of the requirements specified in Paragraphs 92 and 94 of this Consent Decree;

then Kentucky Utilities may so certify these facts to the United States and this Court. If the United States does not object in writing with specific reasons within forty-five (45) Days of receipt of Kentucky Utilities' certification, then, for any Consent Decree

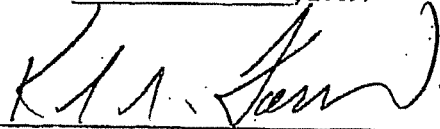
violations that occur after the filing of notice, any enforcement action taken by the United States to resolve those violations shall seek to enforce the requirements contained in the Title V permit through the applicable Title V permit and/or other enforcement authority and not through this Consent Decree.

127. Resort to Enforcement under this Consent Decree. Notwithstanding the preceding Paragraph, if enforcement of a provision in this Decree cannot be pursued by the United States under the applicable Title V permit, or if a Decree requirement was intended to be part of a Title V Permit and did not become or remain part of such permit, then such requirement may be enforced by the United States under the terms of this Decree at any time.

XXVII. FINAL JUDGMENT

128. Upon approval and entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment between the United States and Kentucky Utilities.

SO ORDERED, THIS 17th DAY OF MARCH, 2009.



THE HONORABLE KARL S. FORESTER
UNITED STATES DISTRICT JUDGE

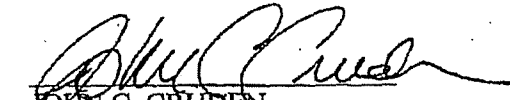
Signature Page for Consent Decree in:

United States of America

v.

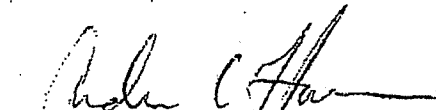
Kentucky Utilities Company, No. 5:07-CV-0075-KSF (E.D. Ky.)

**FOR THE UNITED STATES OF
AMERICA:**



JOHN C. CRUDEN

Acting Assistant Attorney General
Environment and Natural Resources
Division
United States Department of Justice



ANDREW C. HANSON

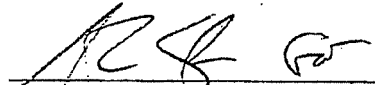
Trial Attorney
Environmental Enforcement Section
Environment and Natural Resources
Division
United States Department of Justice

Signature Page for Consent Decree in:

United States of America

v.

Kentucky Utilities Company, No. 5:07-CV-0075-KSF (E.D. Ky.)



LEE GENTRY
Assistant United States Attorney
Eastern District of Kentucky
United States Department of Justice

Signature Page for Consent Decree in:

United States of America

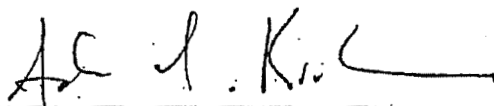
v.

Kentucky Utilities Company, No. 5:07-CV-0075-KSF (E.D. Ky.)



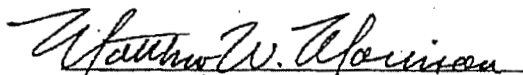
CATHERINE R. McCABE

Acting Assistant Administrator
Office of Enforcement and Compliance Assurance
United States Environmental Protection Agency



ADAM M. KUSHNER

Director
Office of Civil Enforcement
United States Environmental Protection Agency



MATTHEW M. MORRISON

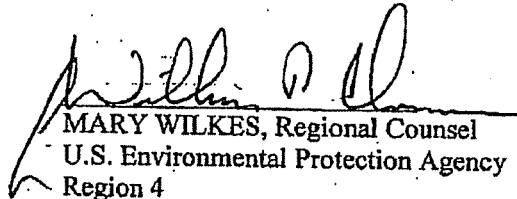
Acting Director, Air Enforcement Division
Office of Enforcement and Compliance Assurance
United States Environmental Protection Agency

Signature Page for Consent Decree in:

United States of America

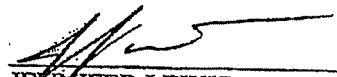
v.

Kentucky Utilities Company, No. 5:07-CV-0075-KSF (E.D. Ky.)



MARY WILKES, Regional Counsel
U.S. Environmental Protection Agency
Region 4

61 Forsyth St., S.W.
Atlanta, GA 30303.



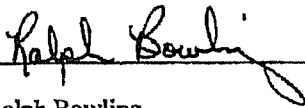
JENNIFER LEWIS, Associate Regional Counsel
U.S. Environmental Protection Agency
Region 4

61 Forsyth Street, S.W.
Atlanta, GA 30303

Signature Page for Consent Decree in:

United States of America
v.
Kentucky Utilities Company, No. 5:07-CV-0075-KSF (E.D. Ky.)

FOR DEFENDANT
KENTUCKY UTILITIES COMPANY

By: 

Name: Ralph Bowling

Title: Vice President, Power Production
E.ON U.S. LLC

Dated: 12/22/08

APPENDIX

In compliance with, and in addition to, the requirements in Section VIII of this Consent Decree (Environmental Mitigation Projects), Kentucky Utilities shall comply with the requirements of this Appendix to ensure that the benefits of the \$3 million in Project Dollars are achieved.

I. Overall Environmental Mitigation Projects Schedule and Budget

A. Within one hundred twenty (120) days from entry of this Consent Decree, as further described below, Kentucky Utilities shall submit plans to EPA for review and approval pursuant to Section XII (Review and Approval of Submittals) of this Consent Decree for spending the \$3 million in Project Dollars specified in this Appendix in accordance with the deadlines established in this Appendix. EPA shall determine, prior to approval, that all Environmental Mitigation Projects ("Projects") are consistent with federal law.

B. Kentucky Utilities may, at its election, consolidate the plans required by this Appendix into a single plan.

C. Consistent with Paragraph 47 of the Consent Decree, beginning six months from entry of this Consent Decree, and continuing semi-annually thereafter until completion of each Project (including any applicable periods of demonstration or testing), Kentucky Utilities shall provide EPA with written reports detailing the progress of each Project, including an accounting of Project Dollars spent to date.

D. Consistent with Paragraph 48 of the Consent Decree, within sixty (60) days following the completion of each Project required under this Consent Decree (including any applicable periods of demonstration or testing), Kentucky Utilities shall submit to the United States a report that documents the date that the Project was completed, Kentucky Utilities' results of implementing the Project, including the emission reductions or other environmental benefits achieved, and the Project Dollars expended by Kentucky Utilities in implementing the Project.

E. Upon EPA's approval of the plans required by this Appendix, Kentucky Utilities shall complete the Projects according to the approved plans. Nothing in the Consent Decree or this Appendix shall be interpreted to prohibit Kentucky Utilities from completing the Projects before the deadlines specified in the schedule of an approved plan.

F. If Kentucky Utilities is unable to expend all of the Project Dollars as allocated below in accordance with the schedule contained in this Appendix and with this Consent Decree, or if a third party does not expend all the Project Dollars as allocated to it in accordance with this Appendix and with this Consent Decree and the schedules contained therein, Kentucky Utilities shall provide notice to EPA and the United States Department of Justice pursuant to Section XVIII (Notices) that not all of those funds were expended in accordance with this Appendix and this Consent Decree. In such notice, Kentucky Utilities shall propose new environmental mitigation projects on which the remaining Project Dollars will be expended with a proposed

schedule of when such projects shall be implemented. Upon review and approval by EPA pursuant to Section XII (Review and Approval of Submittals), Kentucky Utilities shall implement those environmental mitigation projects in accordance with the schedule as approved by EPA and Paragraph 58 of this Consent Decree.

II. Carbon Dioxide ("CO₂") Sequestration Project

A. By no later than December 31, 2009, Kentucky Utilities shall make funding contributions in the total amount of \$1.8 million to the Western Kentucky Carbon Storage Foundation, Inc. ("Foundation"), a 501(c)(3) tax-exempt organization, to be used for the purpose of supporting research by the University of Kentucky's Kentucky Geological Survey ("KGS"), through the Kentucky Consortium for Carbon Storage ("KYCCS"), to determine the feasibility of permanent geological sequestration of CO₂ in western Kentucky, as described in more detail in Section II.B. of this Appendix, below (the "CO₂ Sequestration Project").

B. The funds contributed to the Foundation by Kentucky Utilities shall be used for the performance of the western Kentucky deep saline carbon storage project, one of four subprojects being conducted by KYCCS. The western Kentucky project includes all activities necessary to complete the drilling of a deep test well in western Kentucky, injection testing to evaluate CO₂ sequestration capability, and analysis of resulting data.

C. The \$1.8 million that Kentucky Utilities contributes to the Foundation shall be used only for the following activities, as they are described in Exhibit 1 to the June 11, 2008 Memorandum of Agreement between KGS and the Foundation: Phase 2, Pre-Selection Site Screening; Phase 3, Detailed Site Characterization and Final Approval; Phase 4, Well Permitting, Design, Construction and Evaluation; Phase 5, Injection Testing, Well Closure and Monitoring; and Phase 6, Reporting and Closure. As part of its report to be submitted pursuant to Section I.D., above, Kentucky Utilities shall provide a description of the activities for which the Foundation expended money during the performance period for the Project.

D. In addition to the information required to be included in the report to be submitted pursuant to Section I.D., above, Kentucky Utilities shall also provide to EPA the results of the injection tests, including any final written reports regarding the results prepared by KYCCS, either as part of the report submitted pursuant to Section I.D. or within thirty (30) days after such information is made available to the Foundation or Kentucky Utilities, whichever is earlier.

III. Clean Diesel School Bus Retrofit Project

A. Within one hundred twenty (120) days from entry of this Consent Decree, Kentucky Utilities shall submit to EPA for review and approval pursuant to Section XII (Review and Approval of Submittals) of this Consent Decree a plan to retrofit in-service public school bus diesel engines with emission control equipment further described in this Section, designed to reduce emissions of particulates and/or ozone precursors and fund the operation and maintenance of the retrofit equipment for the time period described below (the "Clean Diesel School Bus Retrofit Project"). This Project shall include, where necessary, techniques and infrastructure needed to support such retrofits. Kentucky Utilities shall spend no less than \$1,000,000 in

Project Dollars in performing this Clean Diesel School Bus Retrofit Project. Kentucky Utilities shall complete the installation of the retrofit equipment no later than December 31, 2010, and ensure that the recipients operate and maintain the retrofit equipment from the date of installation through December 31, 2015, by providing funding for operation and maintenance as described in Section III.B.7, below.

B. The plan shall also satisfy the following criteria:

1. Involve public school bus fleets located in the Commonwealth of Kentucky.
2. Provide for the retrofit of public school bus diesel engines with EPA or California Air Resources Board ("CARB") verified emissions control technologies designed to achieve the greatest measurable mass reductions of particulates and/or ozone precursors for the fleet of school buses in the public school district(s) that participate(s) in this Project. Depending upon the particular EPA or CARB verified emissions control technology selected, the retrofit school bus diesel engines must achieve emission reductions of particulates and/or ozone precursors by 30%-90%, as measured from the pre-retrofit emissions for the particular diesel school bus.
3. Describe the process Kentucky Utilities will use to determine the most appropriate emissions control technology for each particular school bus diesel engine that will achieve the greatest mass reduction of particulates and/or ozone precursors. In making this determination, Kentucky Utilities must take into account the particular operating criteria required for the EPA or CARB verified emissions control technology to achieve the verified emissions reductions.
4. Provide for the retrofit of school bus diesel engines with either: (a) diesel particulate filters; (b) diesel oxidation catalysts and closed crankcase ventilation systems; or (c) another emission reduction technology or methodology approved by EPA.
5. Describe the process Kentucky Utilities will use to notify public school districts within the geographic area specified in Section III.B.1 that their fleet of school buses may be eligible to participate in the Clean Diesel School Bus Retrofit Project and to solicit their interest in participating in the Project.
6. Describe the process and criteria Kentucky Utilities will use to select the particular public school districts to participate in this Project, consistent with the requirements of this Section.
7. For each of the recipient public school districts, describe the amount of Project Dollars that will cover the costs associated with: (a) purchasing the verified emissions control technology, (b) installation of the verified emissions control technology (including data logging), (c) training costs associated with repair and maintenance of the verified emissions control technology (including technology cleaning and proper disposal of waste generated from cleaning), and (d) the incremental costs for repair and maintenance of the retrofit equipment from the date of installation through December 31,

2015, including the costs associated with the proper disposal of the waste generated from cleaning the verified emissions control technology. This Project shall not include costs for normal repair or operation of the retrofit school bus.

8. Include a mechanism to ensure that recipients of the retrofit equipment will bind themselves to follow the operating criteria required for the verified emissions control technology to achieve the verified emissions reductions and properly maintain the retrofit equipment installed in connection with the Project for the period beginning on the date the installation is complete through December 31, 2015.

9. Describe the process Kentucky Utilities will use for determining which school buses in a particular public school fleet will be retrofit with the verified emissions control technology, consistent with the criteria specified in Section III.B.2.

10. Ensure that recipient public school district(s), or their funders, do not otherwise have a legal obligation to reduce emissions through the retrofit of school bus diesel engines.

11. For any third party with whom Kentucky Utilities might contract to carry out this Project, establish minimum standards that include prior experience in arranging retrofits, and a record of prior ability to interest and organize fleets, school districts, and community groups to join a clean diesel program.

12. Ensure that the recipient public school district(s) comply with local, state, and federal requirements for the disposal of the waste generated from the verified emissions control technology and follow CARB's guidance for the proper disposal of such waste.

13. Include a schedule and budget for completing each portion of the Project, including funding for operation and maintenance of the retrofit equipment through December 31, 2015.

C. In addition to the information required to be included in the report to be submitted pursuant to Section I.D., above, Kentucky Utilities shall also describe the school districts where it implemented this Project; the particular types of verified emissions control technology (and the number of each type) that it installed pursuant to this Project; the type, year, and horsepower of each retrofit school bus; an estimate of the number of school children affected by this Project, and the basis for this estimate; and an estimate of the emission reductions for each retrofit school bus (using the manufacturer's estimated reductions for the particular verified emissions control technology), including particulates, hydrocarbons, carbon monoxide, and nitrogen oxides.

D. Upon EPA's approval of the plan, Kentucky Utilities shall complete the Clean Diesel School Bus Retrofit Project according to the approved plan and schedule.

IV. National Parks Mitigation

A. Within sixty (60) days from entry of this Consent Decree, Kentucky Utilities shall pay to the National Park Service the sum of \$200,000 to be used in accordance with the Park System Resource Protection Act, 16 U.S.C. § 19jj, for the restoration of land, watersheds, vegetation, and forests using adaptive management techniques designed to improve ecosystem health and mitigate harmful effects from air pollution. This may include reforestation or restoration of native species and acquisition of equivalent resources and support for collaborative initiatives with state and local agencies and other stakeholders to develop plans to assure resource protection over the long-term. Projects will focus on the Mammoth Cave National Park Class I area in Kentucky.

B. Payment of the amount specified in the preceding paragraph shall be made to the Natural Resource Damage and Assessment Fund managed by the United States Department of the Interior. Instructions for transferring funds will be provided to Kentucky Utilities by the National Park Service. Notwithstanding Section IV.A of this Appendix, payment of funds by Kentucky Utilities is not due until ten (10) days after receipt of payment instructions.

C. Upon payment of the required funds into the Natural Resource Damage and Assessment Fund, Kentucky Utilities shall have no further responsibilities regarding the implementation of any project selected by the National Park Service in connection with this provision of the Consent Decree.



Due to the voluminous nature of the exhibit,
please see the compact disc included with
this filing.