

RECEIVED

FEB 16 2012

PUBLIC SERVICE  
COMMISSION

421 West Main Street  
Post Office Box 634  
Frankfort, KY 40602-0634  
[502] 223-3477  
[502] 223-4124 Fax  
www.stites.com

February 16, 2012

**HAND DELIVERED**

Mark R. Overstreet  
(502) 209-1219  
(502) 223-4387 FAX  
moverstreet@stites.com

Jeff R. Derouen  
Executive Director  
Public Service Commission  
211 Sower Boulevard  
P.O. Box 615  
Frankfort, KY 40602-0615

RE: Case No. 2011-00401

Dear Mr. Derouen:

Enclosed please find and accept for filing the original and 14 copies of Kentucky Power Company's Supplemental Responses to Sierra Club 1-47. The public responses contain:

- Six-page written response; and
- CD-ROM containing the public version of the Company's Supplemental Response to Sierra Club 1-47.

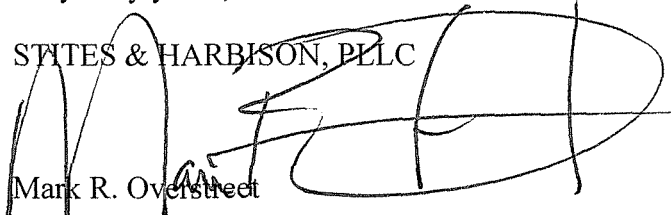
Also filed is a Petition for Confidential Treatment for the ten confidential files contained in the Company's confidential Supplemental Response to Sierra Club 1-47. The confidential files are filed on the sealed Confidential CD-ROM accompanying the motion. That CD-ROM contains the files identified in the Petition for Confidential Treatment.

Please do not hesitate to contact me if you have any questions.

Jeff R. Derouen  
February 16, 2012  
Page 2

Very truly yours,

STITES & HARBISON, PLLC

  
Mark R. Overstreet

MRO

cc: Counsel of Record

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

In The Matter Of:

**APPLICATION OF KENTUCKY POWER  
COMPANY FOR APPROVAL OF ITS  
2011 ENVIRONMENTAL COMPLIANCE  
PLAN, FOR APPROVAL OF ITS  
AMENDED ENVIRONMENTAL COST  
RECOVERY SURCHARGE TARIFF, AND  
FOR THE GRANTING OF A  
CERTIFICATE OF PUBLIC  
CONVENIENCE AND NECESSITY FOR  
THE CONSTRUCTION AND  
ACQUISITION OF RELATED  
FACILITIES**

CASE NO. 2011-00401

**RECEIVED**

FEB 16 2012

PUBLIC SERVICE  
COMMISSION

**Notice of Filing Of Supplemental Responses**  
**To Identified Data Requests**

Kentucky Power Company files its supplement response to the Data Request 1-47 by Tom Vierheller, Beverly May, and the Sierra Club. The Supplemental Response consists of six pages plus a Confidential and a Public CD-ROM. The Confidential CD-ROM consists of:

- (a) five .PDF files;
- (b) four Excel files; and
- (c) one Power Point file.

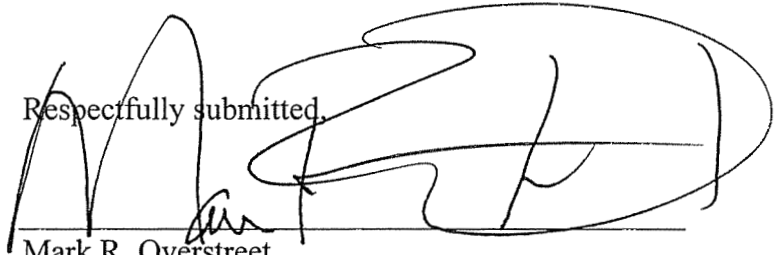
The Public CD-ROM consists of:

- (a) ten .PDF files; and

(b) one internet link.

This the 16<sup>th</sup> day of February, 2012.

Respectfully submitted,



Mark R. Overstreet  
R. Benjamin Crittenden  
STITES & HARBISON, PLLC  
421 West Main Street  
P.O. Box 634  
Frankfort, KY 40602-0634  
Telephone: (502) 223-3477  
COUNSEL FOR KENTUCKY POWER  
COMPANY

**CERTIFICATE OF SERVICE**

I hereby certify that a copy of the foregoing was served by hand delivery or overnight delivery upon the following parties of record, this the 16<sup>th</sup> day of February, 2012.

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

Joe F. Childers  
Joe F. Childers & Associates  
300 The Lexington Building  
201 West Short Street  
Lexington, KY 40507

Jennifer Black Hans  
Dennis G. Howard II  
Lawrence W. Cook  
Assistant Attorney General  
Office for Rate Intervention  
P.O. Box 2000  
Frankfort, KY 40602-2000

Kristin Henry  
Sierra Club  
85 Second Street  
San Francisco, CA 94105



Mark R. Overstreet

## **Kentucky Power Company**

### **REQUEST**

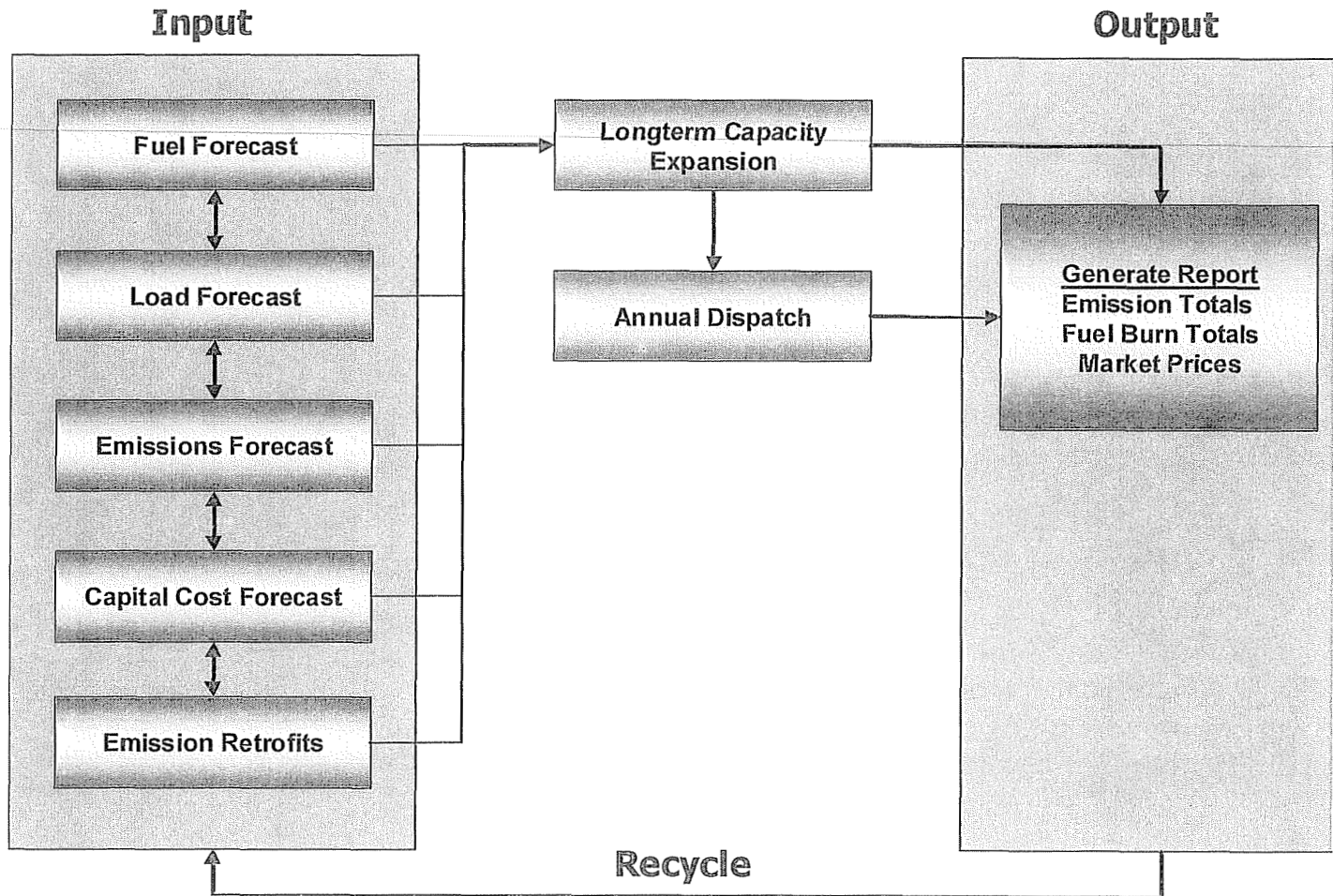
Direct Testimony of Scott Weaver page 20 and Exhibit SCW-2, page 2. PJM on-peak and off-peak energy prices.

- a. Please provide all analyses and research reviewed and/or prepared by the Company underlying its “base” fleet assumption for on-peak energy (PJM-AEP Gen hub) from 2015 through 2040.
- b. Please provide all analyses and research reviewed and/or prepared by the Company underlying its “FT-CSAPR: Upper Band” and “FT-CSAPR: Lower Band” assumptions for on-peak energy (PJM-AEP Gen hub) from 2015 through 2040.
- c. Please provide all analyses and research reviewed and/or prepared by the Company underlying its “base” fleet assumption for off-peak energy (PJM-AEP Gen hub) from 2015 through 2040.
- d. Please provide all analyses and research reviewed and/or prepared by the Company underlying its “FT-CSAPR: Upper Band” and “FT-CSAPR: Lower Band” assumptions for off-peak energy (PJM-AEP Gen hub) from 2015 through 2040.

### **RESPONSE**

The “base,” “FT\_CSAPR: Upper Band,” “FT-CSAPR: Lower Band,” forecasts are developed using the AuroraXMP dispatch model. The model relies on key input variables, including, but not limited to, supply, demand, fuel, and environmental regulations. Figure 1 illustrates the general forecast process.

Figure 1: AuroraXMP Forecast Process



The “base” forecast represents a sustainable view of key inputs. Upper and Lower Band forecasts measure the sensitivity of the “base” forecast to sustainable changes in fuel prices (coal and natural gas), emission prices (excluding carbon dioxide), and electricity demand.

The “base” forecast incorporates the following views:

Supply: - The long-term forecast incorporates a shift from coal to natural gas plants as a result of low natural gas prices and restrictive environmental regulations. Coal plants are expected to account for the largest share of total retirements.

Fuel: - There are four major driving forces that shape the long-term outlook for natural gas.

· Abundant, relatively low-cost natural gas supplies: Natural gas reserves and productive capacity will continue to grow domestically and globally as shale gas extraction technology becomes widespread. Despite current negative reaction, the environmental impacts of shale gas development will ultimately be manageable.

· Natural gas is a cost-effective fuel for electric generation: In a carbon-constrained environment, gas-fired generation remains the low-cost means to reduce emissions. Natural gas-fired capacity will play the key role in providing back-up to intermittent renewable energy.

· Natural gas pipeline capacity will keep pace with the evolving locations of supply and consumption: The extensive domestic natural gas transportation infrastructure is sufficiently robust to overcome constraints through existing capacity expansions, flow reversals, and new construction.

· The role of natural gas spans many sectors of the economy: Demand for natural gas in the expanding global economy will increase as electric generation, residential/commercial space heating and industrial processes are all advantaged with lower natural gas prices. However, a revolutionary transition to compressed natural gas usage in the transportation sector is unlikely.

There are four major driving forces that shape the long-term outlook for coal.

· Strict regulations on environment and safety: The U.S. EPA began implementation of strict water quality standards for coal mining, especially for mountaintop removal mining practices. Currently, approximately half of the coal production in Central Appalachia (CAPP) comes from surface mines and may be affected by EPA regulations. Since the April 2010 Upper Big Branch mine disaster, the Mine Safety and Health Administration (MSHA) has further tightened mining safety regulations for underground mining. MSHA inspectors visit mines more frequently, which may expose safety issues earlier but may also adversely affect mine production and lower mine productivity.

· Competition from inexpensive natural gas: The development of shale gas extraction technology unlocks inexpensive and abundant natural gas. In 2010, the average natural gas price at the Henry Hub remained relatively low at \$4.37/mmBtu, which put natural gas in direct competition with coal for power generation. Coal-to-natural gas switching for power generation dampens the electric power sector coal demand, especially in the U.S. southeast, where delivered coal prices were already high due to elevated transportation costs.

· Massive retirement of coal-fired plants: Domestic coal demand is projected to decline after massive coal-fired plant retirement due to implementation of HAPs. Currently, the U.S. power sector consumes more than 90% of coal, and massive coal plant retirement dampens coal demand significantly. Lower demand puts downward pressure on coal prices. Environmental controls installed to comply with HAPs will increase coal plant fuel flexibility, and reduce pressure on CAPP coal supply.

· High U.S. coal exports: The U.S. economic recovery was slower than expected in 2010, as was the demand for electricity and energy commodities. However, emerging economies in Asia were strong because they were hit less severely by the global economic downturn, and recovered faster. Demand for coal in global markets, especially in the Asian market for both metallurgical and thermal coal, grew stronger in 2010. Flooding in Australia's coal mining region from November 2010 through January 2011 disrupted Australian coal exports. Again, as in 2008, the U.S. coal producers seized the opportunity of high international coal demand, and exported historically high volume of 81.7 million tons coal in 2010, 22.6 million tons more than 2009 and 0.2 million tons more than 2008.

Demand: The Economic Forecasting Group has developed load forecasts for three major regions of the U.S. electric industry, i.e., Eastern, ERCOT and Western interconnects, with these regions having 12, 4 and 12 zones, respectively. The aggregate projected growth rate for the forecast period is 1.0%. Within the regions served by AEP, in aggregate they lag the U.S. in economic and load growth. The slowest growing regions within AEP are the AEP-East Zone, with growth being adversely affected by competitive pressures facing the automotive, coal mining and steel industries and the AEP-SPP Zone.

Environment: The environmental portion of the forecast is the most dynamic portion of the long-term forecast. Each year, AEP considers the best available information to develop its view of environmental markets. The following section describes the environmental view incorporated into the long-term forecast and recognizes that future environmental policy may be different from those views assumed in this forecast.

*Cross-State Air Pollution Rule (CSAPR):* In response to the D.C. Circuit Court's vacatur of the Clean Air Interstate Rule (CAIR), the Environmental Protection Agency (EPA) released CSAPR as a replacement rule. Specifically, CSAPR addresses the Court's concern of air pollution across state boundaries by transitioning from a regional cap-and-trade program to state specific emission limits. The covered states will be required to limit the sulfur dioxide and nitrogen oxides emission to an amount, in most states, below current levels. Allowances can be traded within individual groups, however, total allowances cannot exceed allocated allowances. In



2014, state emissions cannot exceed state assurance levels without incurring a penalty payment. On December 30, 2011 the court issued a stay of the rule. The final outcome is yet to be determined.

*Mercury Air Toxic Standard (MATS):* On February 8, 2008, the D.C. Court vacated the Clean Air Mercury Rule (CAMR) governing the release of mercury emissions. As expected, the replacement rule establishes a Maximum Achievable Control Technology (MACT) standard for Hazardous Air Pollutants (mercury, acid gases, and other organic air toxins) rather than a market-based program. The revised command-and-control program will require coal and oil plants to meet specific emission limits or be forced to retire.

*Coal Combustion Residuals (CCR or Coal Ash):* In response to the massive coal ash spill at the Tennessee Valley Authority's Kingston facility, EPA began the process of regulating the waste (residuals) from the combustion of fossil-fuels. The proposed rule includes hazardous and non-hazardous options that could require wet ponds to either install liners or convert to dry storage.

*Cooling Water Intake Structures – 316(b):* Section 316(b) of the Clean Water Act governs the withdrawal of cooling water to protect aquatic organisms. In particular, the proposed rule establishes requirements to limit aquatic impingement (being pinned against screens) and entrainment (being drawn into cooling water systems) by power plants. According to the proposed rule, the EPA is not pursuing the most restrictive policy (closed-cycle cooling systems) by allowing site-specific flexible technology options.

*Carbon Dioxide (CO<sub>2</sub>):* In the absence of federal legislation, carbon emissions are currently being addressed through regulation. Specifically, the EPA has been implementing the greenhouse gas New Source Performance Standards and Best Available Control Technology regulations of coal plants. Moreover, carbon emissions are regulated through State and Regional programs. In the future, the long-term forecast incorporates a national carbon tax with non-binding emission targets.

The Upper Band forecast measures the sensitivity of the “base” forecast to sustainable higher fuel prices (coal and natural gas), emission prices (excluding carbon dioxide), and electricity demand.

The Lower Band forecast measures the sensitivity of the “base” forecast to sustainable lower fuel prices (coal and natural gas), emission prices (excluding carbon dioxide), and electricity demand.

See also the response to Staff 1-68.

**2/16/2012 SUPPLEMENTAL RESPONSE**

To the extent this data request seeks "all analyses or research reviewed and/or prepared by the Company", Kentucky Power objects to the request as overly broad and unduly burdensome because it requires the production of thousands of documents. Without waiving this objection, attached are representative samples of responsive analyses and research. A portion of the documents being produced are confidential and are the subject of the accompanying Petition for Confidential Treatment.

**WITNESS:** Scott C Weaver, Karl R. Bletzacker

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

RECEIVED

FEB 16 2012

PUBLIC SERVICE  
COMMISSION

In The Matter Of:

**APPLICATION OF KENTUCKY POWER  
COMPANY FOR APPROVAL OF ITS  
2011 ENVIRONMENTAL COMPLIANCE  
PLAN, FOR APPROVAL OF ITS  
AMENDED ENVIRONMENTAL COST  
RECOVERY SURCHARGE TARIFF, AND  
FOR THE GRANTING OF A  
CERTIFICATE OF PUBLIC  
CONVENIENCE AND NECESSITY FOR  
THE CONSTRUCTION AND  
ACQUISITION OF RELATED  
FACILITIES**

CASE NO. 2011-00401

**PETITION FOR CONFIDENTIAL TREATMENT**

Kentucky Power Company ("Kentucky Power") moves the Commission pursuant to 807 KAR 5:001, Section 7, for an Order granting confidential treatment for the identified portions of Kentucky Power's response to Sierra Club 1-47. The information for which confidential treatment is being sought is contained on the enclosed CD-ROM Labeled "Sierra Club's Initial Set of Data Requests, Item No. 47, CONFIDENTIAL." The ten files for which confidential treatment is sought are labeled:

- (a) Cooling Water Rule August 2011;
- (b) EPA Air Toxics Rule;
- (c) EPA Ash Proposal;
- (d) Replacing CAIR EPA Proposes;
- (e) Staying Power;
- (f) Announced FGD Retrofits;

- (g) Announced SCR;
- (h) Announced U.S. Coal Retirements;
- (i) North American Power Roundtable; and
- (j) RFC-PJM Market Fundamentals.

A. The Requests And The Statutory Standard.

Kentucky Power does not object to filing the identified information for which it is seeking confidential treatment, but requests that the identified portions of the responses be excluded from the public record and public disclosure. The Company does not object to providing the identified information to those parties to this proceeding who execute an appropriate confidentiality agreement.

KRS 61.878(1)(c)(1) excludes from the Open Records Act:

Upon and after July 15, 1992, records confidentially disclosed to an agency or required to be disclosed to it, generally recognized as confidential or proprietary, which if openly disclosed would permit an unfair commercial advantage to competitors of the entity that disclosed the records.

This exception applies to the information for which Kentucky Power is seeking confidential treatment.

Specifically, files to be protected are either provided by, or contain information provided by, IHS CERA to AEP or Kentucky Power pursuant to a licensing agreement. The licensing agreement prohibits AEP or Kentucky Power from publicly disclosing the information. AEP has consulted with representatives of IHS CERA who have indicated IHS CERA does not object to the provision of the information pursuant to this Petition for Confidential and the non-disclosure agreement in place in this proceeding.

If Kentucky Power were required to provide the licensed information in violation of its licensing agreement it risks no longer being able to obtain the information. AEP and Kentucky

Power, as do other electric utilities, use the licensed materials in the operation of their business. To the extent Kentucky Power and AEP lose access to the licensed information they would be placed at a competitive disadvantage to their competitors (including other utilities that license the information but are not required to make it public in violation of the agreement.)

- B. The Identified Information is Generally Recognized As Confidential And Proprietary and Public Disclosure Of It Will Result In An Unfair Commercial Advantage for Kentucky Power's Competitors.

The identified information required to be disclosed by Kentucky Power in response to the data requests at issue is confidential. Dissemination of the information for which confidential treatment is being requested is restricted by Kentucky Power, AEP, and AEPSC. The Company, AEP and AEPSC take all reasonable measures to prevent its disclosure to the public as well as persons within the Company who do not have a need for the information. The information is not disclosed to persons outside Kentucky Power, AEP or AEPSC. Within those organizations, the information is available only upon a confidential need-to-know basis that does not extend beyond those employees with a legitimate business need to know and act upon the identified information.

- C. The Identified Information Is Required To Be Disclosed To An Agency.


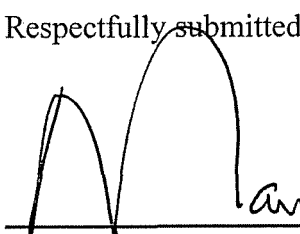
The identified information is by the terms of the Data Requests and Commission practice required to be disclosed to the Commission. The Commission is a "public agency" as that term is defined at KRS 61.870(1). Any filing should be subject to a confidentiality order and any party requesting such information should be required to enter into an appropriate confidentiality agreement.

Wherefore, Kentucky Power Company respectfully requests the Commission to enter an

Order:

1. According confidential status to and withholding from public inspection the identified information; and
2. Granting Kentucky Power all further relief to which it may be entitled.

Respectfully submitted,



Mark R. Overstreet  
R. Benjamin Crittenden  
STITES & HARBISON PLLC  
421 West Main Street  
P. O. Box 634  
Frankfort, Kentucky 40602-0634  
Telephone: (502) 223-3477

COUNSEL FOR KENTUCKY POWER  
COMPANY

**CERTIFICATE OF SERVICE**

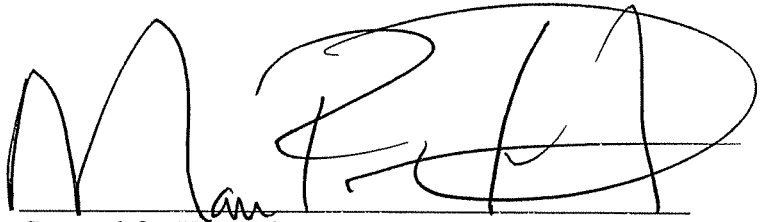
I hereby certify that a copy of the foregoing was served by hand delivery or overnight delivery, upon the following parties of record, this 16<sup>th</sup> day of February, 2012.

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

Dennis G. Howard II  
Lawrence W. Cook  
Assistant Attorney General  
Office for Rate Intervention  
P.O. Box 2000  
Frankfort, Kentucky 40602-2000

Joe F. Childers  
Joe F. Childers & Associates  
300 The Lexington Building  
201 West Short Street  
Lexington, Kentucky 40507

Kristin Henry  
Sierra Club  
85 Second Street  
San Francisco, California 94105



Counsel for Kentucky Power Company