

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 TO)	CASE NO.
CONSTRUCT A SELECTIVE CATALYTIC)	2006-00206
REDUCTION SYSTEM AND APPROVAL OF ITS)	
2006 COMPLIANCE PLAN FOR RECOVERY BY)	
ENVIRONMENTAL SURCHARGE)	

FIRST DATA REQUEST OF COMMISSION STAFF TO
KENTUCKY UTILITIES COMPANY

Kentucky Utilities Company ("KU"), pursuant to 807 KAR 5:001, is requested to file with the Commission the original and 5 copies of the following information, with a copy to all parties of record. The information requested herein is due on or before August 7, 2006. Each copy of the data requested should be placed in a bound volume with each item tabbed. When a number of sheets are required for an item, each sheet should be appropriately indexed, for example, Item 1(a), Sheet 2 of 6. Include with each response the name of the witness who will be responsible for responding to questions relating to the information provided. Careful attention should be given to copied material to ensure that it is legible. Where information requested herein has been provided, in the format requested herein, reference may be made to the specific location of said information in responding to this information request.

1. Refer to the Application, page 4. On June 23, 2006, KU filed an application seeking a Certificate of Public Convenience and Necessity for its proposed Selective Catalytic Reduction ("SCR") facilities at Ghent Unit 2 and approval of an

amended environmental compliance plan and amended surcharge tariff. KU requested that the Commission rule on the Certificate of Public Convenience and Necessity no later than December 20, 2006. Under the provisions of KRS 278.183, the Commission must rule upon KU's amended environmental compliance plan and surcharge mechanism within 6 months of the filing of its application. As KU filed its application on June 23, 2006, the Commission must rule on the environmental compliance plan and surcharge application no later than December 22, 2006. Explain why KU believes the Certificate of Convenience and Public Necessity is needed two days prior to the date the Commission must rule on the amended environmental compliance plan and amended surcharge tariff.

2. Refer to the Direct Testimony of Kent W. Blake ("Blake Testimony"), pages 3 through 5. Mr. Blake notes that in Case No. 2000-00112,¹ the Commission had previously granted certificates of public convenience and necessity to KU to construct SCRs at Ghent Units 1, 3, and 4 and Brown Unit 3. It was noted in that case that KU's consultant, Sargent & Lundy, had recommended SCRs be constructed at Ghent Units 1 through 4, but that KU's analysis showed its substitution of an SCR at Brown Unit 3 for Ghent Unit 2 resulted in \$15 million in capital cost savings. Mr. Blake states that KU did not construct the SCR at Brown Unit 3, based on KU's determination that this SCR was not needed or cost-effective to achieve compliance with allowed nitrogen oxide ("NOx") emission limits.

¹ Case No. 2000-00112, Application of Kentucky Utilities Company and Louisville Gas and Electric Company for a Certificate of Convenience and Necessity to Construct Selective Catalytic Reduction (SCR) NOx Control Technologies, final Order dated June 22, 2000.

a. When did KU make the determination that the SCR at Brown Unit 3 was not needed or cost-effective for compliance with NOx emission limits?

b. Describe in detail the analysis performed by KU that supported its decision concerning the SCR at Brown Unit 3 and provide copies of any written studies or reports that recommended an SCR at Brown Unit 3 should not be constructed.

c. The SCR proposed for Ghent Unit 2 in this proceeding has an estimated project cost of \$95.0 million. Provide the estimated project cost for the Ghent Unit 2 SCR as recommended by Sargent & Lundy in conjunction with Case No. 2000-00112.

3. Refer to the Direct Testimony of Sharon L. Dodson (“Dodson Testimony”), pages 5 through 7. Provide a schedule showing for each of KU’s generating units the following emissions data for sulfur dioxide (“SO₂”), NOx, and mercury, if available:

a. The level of emissions for calendar year 2005.

b. The expected level of emissions for calendar year 2006.

c. The expected level of emissions permitted under the first phase of the Clean Air Interstate Rule (“CAIR”) or the Clean Air Mercury Rule (“CAMR”).

d. The expected level of emissions permitted under the second phase of the CAIR or CAMR.

4. Refer to the Dodson Testimony, pages 8 and 9.

a. Are there currently federal, state, or local emission limits established for sulfur trioxide (“SO₃”)?

b. If yes to part (a), provide the current emission limits.

c. For calendar year 2005, what were the actual SO₃ emissions for Ghent Units 1, 3, and 4?

d. If there are no established emission limits for SO₃, how can KU determine whether the actions it takes to limit these emissions are adequate?

5. Refer to the Dodson Testimony, Exhibits SLD-2 and SLD-5.

a. Explain why the Title V Operating Permit for the Ghent Station does not reference the flue gas desulfurization systems (“scrubbers”) at Ghent Units 2 through 4 and the SCRs at Ghent Units 1, 3, and 4.

b. Explain why the Title V Operating Permit for the Brown Station does not reference the scrubber for Brown Units 1 through 3.

6. Refer to the Direct Testimony of John P. Malloy (“Malloy Testimony”), Exhibit JPM-2, the 2006 NO_x Compliance Strategy, page 35 of 74. For each of the general assumptions listed below, describe the basis for the assumption and explain why the assumption is reasonable. Include any calculations, workpapers, or other documentation that supports the assumption.

a. Discount Rate of 7.85 percent.

b. Environmental Projects Book Life of 34 years.

c. Annual capital cost escalation rate of 5 percent.

d. Annual Fixed Operation and Maintenance (“O&M”) escalation rate of 2 percent.

e. Annual Variable O&M escalation rate of 2 percent.

f. No unit retirements occur on the Companies’ generating system within the 2006 through 2035 study period.

7. Refer to the Malloy Testimony, Exhibit JPM-2. The 2006 NOx Compliance Strategy states on page 11 of 74 that the most significant contributors of NOx emissions for KU are Ghent Unit 2 and Brown Unit 3. Appendix 3 of the 2006 NOx Compliance Strategy, page 29 of 74, states that compliance with the CAIR NOx limits will require the installation of SCRs at Ghent Unit 2 and Brown Unit 3. The 2006 NOx Compliance Strategy evaluated the installation of an SCR at either Ghent Unit 2 or Brown Unit 3 separately with various in-service dates between 2008 and 2016. The 2006 NOx Compliance Strategy concluded and recommended that an SCR be installed at Ghent Unit 2 with an in service date of 2009. The 2006 NOx Compliance Strategy also briefly evaluated the installation of an SCR at Ghent Unit 2 in 2009 and the installation of an SCR at Brown Unit 3 in either 2013, 2014, 2015, or 2016. Among the options looking at two SCRs, the 2006 NOx Compliance Strategy concluded that the installation of SCRs at Ghent Unit 2 in 2009 and Brown Unit 3 in 2013 was the least cost alternative.

a. The majority of the 2006 NOx Compliance Strategy focuses on the evaluation of adding an SCR at either Ghent Unit 2 or Brown Unit 3. Given that these units have been identified as the most significant contributors of NOx emissions and that compliance with the CAIR NOx limits requires the installation of SCRs at both units, explain in detail why the 2006 NOx Compliance Strategy focuses so much on the installation of only one SCR.

b. Did KU consider and evaluate the option of installing SCRs at Ghent Unit 2 in 2009 and Brown Unit 3 in either 2009, 2010, 2011, or 2012?

(1) If yes, provide the results of these alternatives and explain in detail why such alternatives were not discussed in the 2006 NOx Compliance Strategy.

(2) If no, explain why these alternatives were not evaluated.

8. Refer to the Malloy Testimony, Exhibit JPM-4, the Sargent & Lundy SO₃ Mitigation Study dated March 29, 2006 (“Sargent & Lundy Study”). The Commission granted KU Certificates of Public Convenience and Necessity to construct a scrubber at Ghent Unit 1 in Case No. 1992-00005² and at Ghent Units 2 through 4 in Case No. 2004-00426.³ On page 1 of 42 of the Sargent & Lundy Study are the following statements concerning the scrubbers at Ghent:

An FGD system is currently being installed for Unit 3, with future FGD installations for Units 1&4 in the planning stages. The existing FGD system on Unit 1 will be switched to serve Unit 2.

a. Explain in detail the basis for Sargent & Lundy making these statements. Include in this explanation a discussion of why such a switch is contemplated.

b. Was KU planning on seeking an amendment to the already issued Certificates of Public Convenience and Necessity for Ghent Unit 2 and a new Certificate of Public Convenience and Necessity for Ghent Unit 1? Explain the response.

c. Under KRS 278.020(1), unless the authority granted by a Certificate of Public Convenience and Necessity is exercised within one year, such authority expires. Provide details of the actual construction that has taken place on the

² Case No. 1992-00005, The Application of Kentucky Utilities Company for a Certificate of Convenience and Necessity to Construct a Scrubber on Unit No. 1 of Its Ghent Generating Plant, final Order dated July 24, 1992.

³ Case No. 2004-00426, 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, final Order dated June 20, 2005.

scrubbers for Ghent Units 2 and 4 or the financial commitments entered into for the scrubbers on those units.

9. Refer to the Malloy Testimony, Exhibit JPM-4.

a. On pages 24 through 28 of 42 of the Sargent & Lundy Study is a risk assessment of the various SO₃ mitigation technologies. The risk assessment notes that sorbent injection technologies have the risk of producing deposits in the ductwork, the air preheater, and on turning vanes and internal struts and bracing, as well as process scale-up risk. Explain in detail how these risks were quantified in the present value revenue requirements (“PVRR”) analysis of SO₃ mitigation technologies.

b. On page 38 of 42 of the Sargent & Lundy Study is the statement that KU has agreed to prepare a life cycle cost analysis based on data presented in the study. Provide copies of this life cycle cost analysis. If the analysis has not been prepared, explain in detail why not.

10. Refer to the Malloy Testimony, Exhibit JPM-5, the 2006 SO₃ Mitigation Strategy. On pages 26 and 27 of 42 in the Sargent & Lundy Study, the risk assessment has the following statements concerning hydrated lime and Trona:

Hydrated Lime: The data presented in the literature for this technology is old, and full scale results from any utility are not documented to serve as the basis for performance estimates. The dry sorbent storage and delivery system is subject to moisture, plugging and erosion problems. The effectiveness of the hydrated lime sorbent depends on high surface area, which varies between lime sources. Fly ash resistivity increases may result in ESP performance degradation.

* * * * *

Trona (Sodium sesquicarbonate): Trona is an expensive reagent with a long shipping distance from Green River,

Wyoming and has been limited by transportation availability at Zimmer Station. Typically shipped by rail, the Trona would have to be transferred to trucks as a centrally located storage and transfer facility. In addition, there is currently only one source of supply. AEP has applied for a patent for this technology, so a licensing fee may apply.

The Executive Summary of the 2006 SO₃ Mitigation Strategy, page 3, recommends that KU proceed with testing of hydrated lime and Trona at Ghent Unit 1 and that hydrated lime and Trona be tested at Ghent Units 3 and 4 while burning high sulfur coal. Given the risks identified in the Sargent & Lundy Study, explain in detail why this recommendation was considered to be reasonable.

11. Refer to the Malloy Testimony, Exhibit JPM-5. In both the executive summary and recommendation sections of the 2006 SO₃ Mitigation Strategy it is stated that KU should proceed with the “testing” of different types of sorbent injection options. The recommendation for testing could imply that a final course of action has not been selected.

a. Why does the 2006 SO₃ Mitigation Strategy recommend further testing rather than proposing a final course of action?

b. Given the discussion contained in the 2006 SO₃ Mitigation Strategy, explain in detail how this report supports the statements on page 20 of the Malloy Testimony, lines 3 through 9, that the use of sorbent injection technology is the least cost alternative to mitigate SO₃ emissions.

12. Refer to the Malloy Testimony, Exhibit JPM-5, page 7. Table II on this page lists the viability of combination technologies.

a. Were the various combination technologies shown on this page evaluated using a PVRR analysis?

b. If yes to part (a), provide the results of the PVRR analysis for each combination technology evaluated.

c. If no to part (a), explain why a PVRR analysis was not performed and how the viability of the combination technologies was determined.

13. Refer to the Malloy Testimony, Exhibit JPM-5, pages 8 and 10.

a. Provide all workpapers, calculations, assumptions and other documentation supporting the PVRR values presented in the charts on page 8. In addition, explain why the PVRR analyses were not provided along with Exhibit JPM-5.

b. Explain in detail why a combination technology of hydrated lime and Trona was not included in the option ranking shown on page 8.

c. On pages 26 and 27 of 42 in the Sargent & Lundy Study, the risk assessment has the following statements concerning sodium bisulfite and soda ash:

Sodium Bisulfite: In addition to the proprietary technology, single source of supply, the yearly licensing fee, and the reagent (sodium bisulfite powder) delivered cost, the major drawback of this technology is O&M cost. The cost of the project installed at Gibson Station increased significantly from start to finish. While byproduct SBS is a less costly sorbent, Vectren may not continue to produce the material.

* * * * *

Soda Ash: In addition to the proprietary technology, this sorbent injection technology requires longer duct residence time due to the multiple reactions which need to take place and does not have the experience level of SBS. Injection of soda ash upstream of the air preheater is not feasible for the LG&E/KU plants due to residence time requirements.

Given these concerns, explain in detail how it was concluded in the 2006 SO₃ Mitigation Strategy, on page 10, that soda ash and sodium bisulfite are the top sorbent options.

14. Has KU made a final determination of exactly what SO₃ mitigation approach should be installed at Ghent Units 1, 3, and 4? Explain the response.

15. Refer to the Direct Testimony of Shannon L. Charnas, page 4. Explain in detail why KU is not seeking to include O&M expenses associated with the pollution control equipment to be installed at Trimble County Unit 2 and the electrostatic precipitators to be installed at Brown.

16. Refer to the Direct Testimony of Robert M. Conroy (“Conroy Testimony”), pages 2 through 4. Provide ES Form 3.00 for the expense month of June 2006 and a version of ES Form 3.00 for the expense month of June 2006 reflecting KU’s proposed changes in determining R(m).

17. Refer to the Conroy Testimony, page 5. Concerning the reporting of plant, construction work in progress, and depreciation expense, does KU agree that it would be reasonable to report the information for the four environmental compliance plans under one format reference number with net subtotals for each environmental compliance plan, even though this would probably become a multiple-page format, similar to the approach used for ES Form 2.50? Explain the response.

18. Refer to the Conroy Testimony, pages 8 and 9.

a. Provide the calculations, workpapers, assumptions, and other documents used to determine the 2006 Plan estimated 1,000 kWh per month residential customer bill increase of \$0.82 in 2007 and \$2.67 in 2010.

b. Provide the calculations, workpapers, assumptions, and other documents used to determine the 2005 Plan estimated 1,000 kWh per month residential customer bill increase of \$3.25 in 2007 and \$6.05 in 2010.

19. Refer to the Conroy Testimony, Exhibit RMC-1.

a. Under the section titled "Definitions" in the proposed tariff the following phrase is included for operating expenses, "adjusted for the Average Month Expense already included in existing rates." Does KU agree that this adjustment is no longer part of its environmental surcharge mechanism and should be deleted from the proposed tariff? Explain the response.

b. KU's current Environmental Cost Recovery Surcharge ("ECR") tariff shows it was effective "with service rendered on and after July 1, 2005." Explain in detail why KU's proposed ECR tariff is to be effective "with bills rendered" rather than "with service rendered."



Beth O'Donnell
Executive Director
Public Service Commission
P. O. Box 615
Frankfort, KY 40602

DATED July 24, 2006

cc: All Parties