COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF BIG RIVERS ELECTRIC CORPORATION TO ASSESS A SURCHARGE UNDER KRS 278.183 TO RECOVER COST OF COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS OF THE CLEAN AIR ACT	)))))	CASE NO. 94-032

O R D E R

IT IS ORDERED that Kentucky Industrial Utility Customers ("KIUC") shall file the original and 12 copies of the following information with the Commission no later than May 13, 1994, with a copy to all parties of record. 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 copies material to ensure that it is legible. Where information requested herein has been provided previously, in the format requested herein, reference may be made to the specific location of said information in responding to this information request.

Questions for Steven A. Mitnick:

1. Refer to Mr. Mitnick's testimony on page 7, lines 16-19, and page 9, lines 1-4. He states that the costs considered for scrubbers in the year 2000 are excessive. As part of Big Rivers Electric Corporation's ("Big Rivers") 1993 Integrated Resource Plan

("IRP") filed in Case No. 93-341,[1] Big Rivers performed a sensitivity analysis which assumed that the scrubber costs would increase at the rate of inflation to the year 2000. Does this analysis address Mr. Mitnick's concerns? If not, why not?

2. Mr. Mitnick contends that the analysis at the time of the scrubber decision was not adequate because the full range of options was not considered. The analysis completed for Big Rivers' 1991 IRP, which was filed in Case No. 91-331,[2] was available to Big Rivers' management at the time of the decision. In preparing his testimony, did Mr. Mitnick review this study? Does this study address any of Mr. Mitnick's concerns? If yes, identify those concerns. If no, explain why not.

3. Mr. Mitnick contends that Big Rivers penalized fuel switching by analyzing only a 2.3 lbs. SO_2/MMBtu fuel switching option for Station Two. This option requires investment in a flue gas conditioning system while switching to 2.6 lbs. SO_2/MMBtu coal does not.

a. Assuming that the 2.6 lbs. SO_2/MMBtu option also requires investment in a flue gas conditioning system, would Mr. Mitnick still conclude that fuel switching is the least cost option?

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1 Case No. 93-341, A Review Pursuant to 807 KAR 5:058 of the 1993 Integrated Resource Plan of Big Rivers Electric Corporation.

2 Case No. 91-331, A Review Pursuant to 807 KAR 5:058 of the 1991 Integrated Resource Plan of Big Rivers Electric Corporation.

b. State the degree to which the analysis of fuel switching versus scrubbing is sensitive to the assumed capital investment for fuel switching.

c. Provide all workpapers that indicate that the capital investment is a critical factor.

4. Refer to Mr. Mitnick's testimony on page 17, lines 5-7. Does the 2.3 lbs. SO_2/MMBtu option include any capital investment cost for barge facilities (see Table B-3a of Attachment B to Exhibit DS-1 of Big Rivers' Clean Air Act Amendments of 1990 - Compliance Plan Reassessment Report ("Reassessment Report"))?

5. The Reassessment Report contains capital investment costs for switching Station Two to Powder River Basin coal. In Mr. Mitnick's opinion, are these costs reasonable? Explain.

6. Refer to Mr. Mitnick's testimony on page 21, lines 5-13. Why are Big Rivers' ratings with respect to other relevant criteria "not believable"?

7. Refer to Mr. Mitnick's testimony on page 23. What analytical tools or models were employed to reproduce the Big Rivers' analysis?

8. a. Did Mr. Mitnick attempt to reproduce Big Rivers' dispatch?

b. If yes, was his attempt successful? Describe the assumptions required to duplicate the dispatch.

9. How did Mr. Mitnick value SO_2 allowances? How did his method of valuation compare to Big Rivers'?

10. Refer to Mr. Mitnick's testimony, page 23. Provide the estimated cost of the 2.6 lbs. SO_2 per MMBtu coal option. Explain where on Exhibit SAM 1.7 the difference of $5.5 million in present value can be found. Over what period of time is the estimated $5.5 million present value savings based?

11. Provide all workpapers and analysis used to reach the numerical conclusions presented in Mr. Mitnick's testimony regarding the "three-legged stool." (See pages 23-37 and page 4.)

12. Refer to Mr. Mitnick's testimony on page 40, lines 1-5. Is there a significant difference in the costs of 2.3 and 2.6 lbs. SO_2/MMBtu coal? If yes, what is this difference? Is this conclusion consistent with KIUC's witness Jill S. Baylor's testimony that there are likely to be only small differences in the costs of these coals?

13. Refer to Mr. Mitnick's testimony on page 40, lines 19-30. Is Big Rivers' use of a 100 percent capacity factor important even though the screening did not exclude a significant number of options? Does the use of average versus incremental costs per ton have a significant impact on the analysis? Explain.

14. What are prices for 2.6 lbs. SO_2/MMBtu coal and scrubber coal used in the analysis discussed in Mr. Mitnick's testimony on page 24, lines 29-30?

15. What sulfur premium was used in the analysis referred to in Mr. Mitnick's testimony on page 32, lines 20-25?

16. Mr. Mitnick states on page 11 of his testimony that Big Rivers does not maintain that the Henderson Station Two scrubber

project is decisively the least-cost option. Identify the material filed in this record which supports this statement.

Questions for Russell L. Klepper:

17. Mr. Klepper, on page 31 of his testimony, recommends that the demand component of the surcharge be divided by the actual and projected demand units. Should Big Rivers be held accountable for an "off-system" projection made several years ago? Why?

18. Is the application of projected off-system sales to the calculation of the "G" factor consistent with KRS 278.183 which directs that actual costs flow through the Surcharge? Why?

19. Identify the provisions of KRS 278.183 which support the use of market forces rather than actual costs to determine the environmental surcharge.

20. Mr. Klepper, on page 28 of his testimony, states that Big Rivers is accelerating the recovery of its investment in the scrubbers. What is the estimated dollar value associated with this acceleration?

21. Provide a copy of the November 8, 1993 memorandum to which Mr. Klepper refers in his testimony at page 49 on lines 18-25.

22. Mr. Klepper, on page 50, lines 9-27 of his testimony, indicates that the Costain coal contract imposed a constraint on Big Rivers. Has Mr. Klepper reviewed Contract 814? Does he agree with Big Rivers' interpretation of this contract?

23. Mr. Klepper's testimony on page 50, lines 9-27, indicates that the Costain coal contract contains a market price reopener

provision in the year 1997. Has Mr. Klepper reviewed this provision? Is it his opinion that Big Rivers could achieve the market price upon exercising the market price reopener?

24. Mr. Klepper, on page 53 of his testimony, implies that Big Rivers borrowed money at 18.2 percent by advance sales of allowances at $179 per ton which would be worth $250 per ton in 1995. What merit does this argument have if the price of allowances is lower than $250 per ton in the year 1995? Provide Mr. Klepper's estimate of the market value of allowances in 1995 and supporting data.

25. Refer to page 61 of Mr. Klepper's testimony. He states that one inequity in the contract between the City of Henderson and Big Rivers is that the city has priority access to the unit in the event of an outage.

a. Has this clause ever been exercised? When? Was Big Rivers forced to take less power than it otherwise would have?

b. During such periods, what would be the likely cost to Big Rivers to meet the terms of the clause?

26. Refer to page 66, line 8 of Mr. Klepper's testimony. What is the "prevailing market price"?

27. Assuming that the contractual terms were appropriate, should Big Rivers extend the term of its contracts for Station Two? Is the extension appropriate given Big Rivers' excess capacity?

28. Refer to page 74 of Mr. Klepper's testimony. Although the allocation of allowances by EPA is based on a historical period, the consumption of allowances is based on current energy

use. May the allocation of allowances be appropriately based on current energy usage?

29. At page 24 of his testimony, Mr. Klepper indicates that the regulatory responsibility of the Commission does not require it to approve or disapprove any specific Clean Air Act Amendments ("CAAA") compliance strategy. In light of the requirements of KRS 278.183(2)(a), explain in detail the basis for this conclusion.

30. At page 28 of his testimony, Mr. Klepper discusses the book depreciation rate which is appropriate to apply to the scrubber at Henderson Station Two. Provide all analyses performed by or for Mr. Klepper which evaluate the appropriate book depreciation rate to be used for a scrubber.

31. At page 52 of his testimony, Mr. Klepper states that "the source of funding for construction is never an appropriate consideration in the process of choosing an asset."

a. Provide supporting authority for this statement.

b. Given Big Rivers' current financial condition, explain in detail why consideration of the source of funding is not appropriate during the process of choosing an asset.

32. At page 106 of his testimony, Mr. Klepper states: "Allow KIUC and all other ratepayers to follow the fuel switching alternative which the ratepayers would have chosen if given the opportunity."

a. On what basis does Mr. Klepper contend that all other ratepayers would have chosen the fuel switching alternative over scrubbing for Henderson Station Two?

b. Explain in detail how, given the requirements of KRS 278.183, the Commission may legally adopt Mr. Klepper's suggestion. Specifically address how the Commission could authorize an environmental surcharge which is not based on actual, incurred compliance costs.

Questions for Jill S. Baylor:

33. Refer to Ms. Baylor's testimony on page 10, lines 7-9. How did she conclude that a linear interpolation method was employed to estimate the price of 2.3 and 2.6 lbs. SO_2/MMBtu coals?

34. In the Reassessment Report, Big Rivers assumes that the prices of all coals, regardless of sulfur content, will decrease in real terms at 2 percent per year. Given Ms. Baylor's experience with coal market analysis, is this a reasonable assumption? How does this assumption affect the analysis of CAAA compliance?

35. Refer to Ms. Baylor's testimony on page 10, lines 18-20. Ms. Baylor suggests that FERC data on the delivered cost of coal to utilities would be an appropriate source of data to assist in determining the price of coal. Has Ms. Baylor completed any analyses of the current or historical prices of coal delivered to other utilities with river access power plants in Big Rivers' area, such as Cincinnati Gas & Electric Company, East Kentucky Power Cooperative, Inc. (Spurlock plant), Indiana & Michigan (Rockport plant) or Kentucky Utilities Company (Ghent plant)? If so, provide these analyses and compare them to the prices estimated by Big Rivers.

36. Although Ms. Baylor states that Big Rivers plans to burn a 7.0 lbs. SO_2 per MMBtu coal with the scrubber (see page 11, lines 18-19 of her testimony), more recent information indicates that Big Rivers plans to burn a 6.4 lbs. SO_2 per MMBtu coal. Is there likely to be a significant difference in price between a 7.0 and a 6.4 lb. coal? Provide an estimate of the approximate sulfur premium for these coals.

37. Refer to Ms. Baylor's testimony on page 15, line 23, through page 16, line 2.

a. Do compliance coals command a premium above other coals?

b. If yes, is the statement at line 1 consistent with the answer to 37(a)?

38. Refer to Ms. Baylor's testimony on page 16, lines 5-13. Provide copies of the sources that are referenced.

39. Refer to Ms. Baylor's testimony on page 17, lines 5-9. Define the term "dramatic" in light of projections at the time in question of rising real prices for low-sulfur and compliance coal.

40. Refer to Ms. Baylor's testimony on page 19, lines 1-8. Does Ms. Baylor believe that the $0.24/MMBtu premium estimated by Resource Data International ("RDI") in the Spring of 1992 is reasonable? Does RDI's estimate support Big Rivers' value of $0.27/MMBtu?

41. If Big Rivers' sulfur premium of $0.27/MMBtu is not reasonable, which of the coal prices upon which it is based is not correct?

42. Has Ms. Baylor evaluated the delivered cost of Powder River Basin coal to Station Two? If yes, provide analysis upon which the evaluation is based. If yes, is the price of this coal reasonable?

43. Refer to Exhibit JSB 1.5. Is the labeling of the third column from the left under the RDI portion of the table correct? If not, provide the correct labeling.

44. What is an appropriate sulfur premium or range of premiums between a scrubber coal and a fuel switch (2.6 lbs. SO_2/MMBtu) coal that Big Rivers should have considered in its analysis?

45. What is an appropriate sulfur premium or range of premiums between a 2.3 lbs. SO_2/MMBtu coal and a 2.6 lbs. SO_2/MMBtu coal that Big Rivers should have considered in its analysis?

Question for Alan S. Taylor:

46. Mr. Taylor proposes that Big Rivers be compensated as if it had pursued coal switching, with its ratepayers neither paying for, nor receiving benefits from, the scrubber. Generally, capital projects such as scrubbers result in high near-term costs in exchange for lower operating costs. How will Mr. Taylor's approach be neutral if it does not account for timing differences between the scrubbing and fuel switching options?

47. Mr. Taylor contends that fuel switching is the least cost compliance plan for Station Two. Thus, the cost recovery will be lower for fuel switching than for scrubbing. Has Mr. Taylor analyzed the financial consequences that fuel switching would have

on Big Rivers' debt restructuring plan? If so, provide this analysis.

48. Refer to Mr. Taylor's testimony on page 21, lines 3-7. Mr. Taylor proposes to determine the cost of 2.6 lbs. SO_2/MMBtu coal by analyzing the cost of spot coal delivered to utilities within a five state area. Since the Coleman plant will burn approximately this quality of coal, could a more relevant measure of the market price be determined by an annual market solicitation for a portion of the supply to Coleman?

49. On page 18 of his testimony, Mr. Taylor recommends that the Surcharge be calculated on an annual or semi-annual basis. Explain why this recommendation is consistent with KRS 278.183 which directs that the Surcharge be calculated monthly?

50. On page 13 of his testimony, Mr. Taylor proposes an incentive mechanism which he suggests is cost neutral to ratepayers. If the scrubber project subsequently becomes the least-cost option, will the incentive mechanism reflect the costs of the scrubber?

51. On pages 10 through 32 of his testimony, Mr. Taylor discusses an alternative surcharge and specifically addresses compliance costs related to the CAAA. Explain how other compliance costs allowed under KRS 278.183 would be included in the alternative surcharge.

52. For each component included in the alternative surcharge discussed on pages 10 through 32 of Mr. Taylor's testimony, explain

specifically how that component constitutes an actual, incurred cost of compliance as contemplated by KRS 278.183.

53. Explain how the alternative surcharge is consistent with the requirements of KRS 278.183.

54. What is the reasonable rate of return for Big Rivers' compliance-related capital expenditures?

Questions for Brooks M. Howell:

55. a. Assuming that additional cost overruns will occur, is there any basis, other than linear extrapolation, for the absolute level of the estimate provided? (See page 7, lines 20-30 of Mr. Howell's testimony.) If yes, identify these other bases.

b. If the total costs were 7.97 percent over total budget as of March 30, 1994, what is the basis for an 11 percent estimated increase through July 1995? (See page 7, lines 20-30 of Mr. Howell's testimony.)

c. Did Mr. Howell review the remaining work tasks, outstanding contract awards, or other elements of the work plan to determine likely overruns and possible savings?

d. Identify all expected cost overruns and their sources.

e. What portion of these identified project overruns falls in the project's overhead account?

f. What portion of these overruns will be borne by contractors or suppliers?

56. a. Mr. Howell states that elimination of certain equipment will lower the maximum sulfur content of coal that can be

burned with the scrubber. Would fuel costs increase significantly if a 6.4 lbs. SO_2/MMBtu coal rather than a 7.59 lbs. SO_2/MMBtu coal were burned?

b. In the past, have there been significant differentials between the costs of coals that contain these levels of sulfur? Is this answer consistent with Jill S. Baylor's testimony that there are likely to be very small differences in fuel costs at these sulfur levels?

c. Did Mr. Howell estimate the operating cost savings, such as lower reagent costs, which could result from lowering the sulfur content of the coal? If yes, provide the estimate. Would inclusion of these savings affect Mr. Howell's conclusions? If yes, explain.

d. Refer to Mr. Howell's testimony at page 9 at lines 1-2 and 19-20. If Station Two or Green is restricted to 3.6 percent sulfur coal rather than 4.2 percent sulfur coal and the scrubber achieves 95 percent removal, will the emissions of SO_2 be lower than before the dewatering restrictions?

e. Provide a cost/benefit comparison, using dollars per ton SO_2 removed, of operations with and without the dewatering equipment. This analysis should include: the increase in fuel costs because of the restriction on the coal sulfur content, the savings in capital investment cost, the savings in variable and fixed O&M costs, the increase in SO_2 reductions achieved by using a lower-sulfur coal with the scrubber, and other factors which Mr.

Howell considers relevant. How does the cost per ton SO_2 removed compare to the market value of allowances?

57. Compare the cost of sulfur dioxide emission reductions to be achieved at Green to the price of SO_2 allowances.

58. Refer to Mr. Howell's testimony on page 10, lines 4-18. If allowances can be purchased to comply with a system-wide emissions cap, why should the load at Station Two be curtailed if the scrubber is undergoing maintenance?

59. Refer to Mr. Howell's testimony on page 10, lines 4-18.

a. Is the relevant economic cost of a scrubber outage the cost of SO_2 emission allowances? Explain.

b. If the 6.4 lbs. SO_2/MMBtu coal to be burned with the scrubber has a higher sulfur content than permitted under the SIP limit, could Station Two maintain a stockpile of coal that meets the SIP limit? If yes, would the relevant economic cost of a scrubber outage be the cost of maintaining the stockpile?

60. Assuming that the Station Two and Green loads are curtailed because of reduced reliability resulting from the Station Two scrubber modifications, what is the value of this lost capacity?

61. Does the ability of Station Two to operate when its scrubber is out affect the estimated cost of any outage and the estimated frequency of load curtailment at Green?

62. Compare the cost of reduced reliability to the cost of the equipment needed to achieve a reliability level that Mr. Howell considers adequate.

63. What is the basis for Mr. Howell's estimate of the likelihood of reliability failures? Compare this analysis to the task force conclusions contained in Exhibit BMH 1.7 which indicate minimal impact on performance of powerplants from the operation of scrubber systems.

64. In his testimony, Mr. Howell indicates that the fixed O&M expenses for the Station Two scrubber have been understated.

a. (1) What task-based assessments of the required operating and maintenance manpower were conducted?

(2) Was the analysis based solely on statistical comparisons?

b. What, if any, statistical adjustments were made to account for differences between the Henderson scrubber and others? (For example, was the required manpower reduced to account for the lack of spare modules relative to other scrubbers, or for a reduction in equipment, notably the dewatering equipment?)

c. Refer to page 2 of Big Rivers' Attachment A to Exhibit DS-1. What additional data are needed to account for O&M costs for inventory items that may have been understated?

d. Estimate the cost effects associated with the missing inventory accounting.

65. Refer to Mr. Howell's testimony on page 14, lines 23-26. Provide the workpapers that were used to develop the $19 million present value estimate.

Done at Frankfort, Kentucky, this 3rd day of May, 1994.

ATTEST:

Executive Director

PUBLIC SERVICE COMMISSION

For the Commission