COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF KENTUCKY UTILITIES COMPANY FOR A CERTIFICATE OF CONVENIENCE AND NECESSITY AND A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY TO CONSTRUCT FOUR 75 MEGAWATT COMBUSTION TURBINE PEAKING UNITS AND ASSOCIATED FACILITIES SCHEDULED FOR COMPLETION IN 1994 AND 1995, RESPECTIVELY, TO BE LOCATED AT THE COMPANY'S E.W. BROWN GENERATING STATION IN MERCER COUNTY, KENTUCKY	)	CASE NO. 91-115

O R D E R

IT IS ORDERED that the Kentucky Utilities Company ("KU") shall file an original and 15 copies of the following information with this Commission, 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 along with the original application, in the format requested herein, reference may be made to the specific location of said information in responding to this information request. When applicable, the information requested herein should be provided for total company

operations and jurisdictional operations, separately. The information requested herein is due no later than July 10, 1991. If the information cannot be provided by this date, you should submit a motion for an extension of time stating the reason a delay is necessary and include a date by which it will be furnished. Such motion will be considered by the Commission.

1. On page 8-12 KU states that a Request for Proposals ("RFP") for the supply of peaking capacity and energy was sent to KU's neighboring utilities in February 1990. KU received two positive responses, only one of which was deemed economical.

a) Provide a copy of the RFP which was sent to KU's neighboring utilities. Also provide the name of the neighboring utilities.

b) Provide the name of the utilities and their responses to the RFP.

c) Explain why the RFP was sent only to neighboring utilities.

d) Explain why a purchase of power from Central Illinois Public Service Co. was either not considered or found to be infeasible.

2. With regard to Appendix V, "Optimal Expansion Plan":

a) Explain the reasons for using a 30-year time period for this analysis.

b) Provide workpapers describing how present value calculations were made for sets A, B, and C.

c) Provide narratives of all assumptions used in each plan in sets A, B, and C.

3. Appendix VI refers to KIP agreement. Provide a copy of the agreement.

4. Provide all workpapers, calculations, and supporting documentation for the cost of operation stated on page 4 of the application. Also, list the assumptions used.

5. Provide all workpapers, calculations, and supporting documentation for the cost of construction stated in the application.

6. Provide all workpapers, calculations, and supporting documentation for pages B.7 through B.12 of Appendix III. Provide a complete description of the tables shown on these pages.

7. Provide workpapers, calculations, and supporting documentation for Appendix C in the DSM Task Force Report.

8. Provide all other workpapers and supporting documentation for the DSM Evaluation plan in Appendix IV.

9. In Appendix IV, KU states, "The present value reduction of revenue requirements due to this deferral of generation construction is equal to $81.3 million." Provide workpapers supporting this determination.

10. Provide workpapers, calculations, and supporting documentation for the dollars per KW for the residential sector, commercial sector, and industrial sector of the technology alternatives for Appendix II.

11. Provide dollars per KW for those technologies in Appendix II which are not provided. If not possible, provide a thorough explanation.

12. Explain how the impact of demand-side management programs on energy sales and peak demand are incorporated into KU's load forecasts.

13. Provide information on the methodologies used by Data Resources, Inc. ("DRI") to forecast state-level economic variables which are used by KU in its load forecasts. Describe the methodologies used by KU to adjust the DRI forecasts to reflect service territory specific estimates.

14. Explain how KU determined that nominal average and marginal price per KWH of FERS customers would increase at an annual rate of 5.9 percent as shown on page 5-15 of the integrated resource plan.

15. A key assumption underlying KU's load forecast is a 0.7 percent average annual decrease in Eastern Kentucky coal production and a 3.1 percent average annual decrease in Western Kentucky coal production. Do these estimates take into account the effect the Clean Air Act Amendments of 1990 might have on the Kentucky coal industry? Explain.

16. Explain how KU determined that the nominal wholesale price of electricity would increase at an average annual rate of 6.5 percent as shown on page 5-16 of the integrated resource plan.

17. Was the marginal price of electricity considered as a variable in the regression equation of the Residential RS Consumption Model? If so, why was it not used in that model?

18. Fully describe the weather normalization methodology used to determine the normalized annual energy sales, generation,

and peak demands shown on pages 7-2 and 7-3 of the integrated resource plan.

19. Provide a thorough description of how the impact of existing and continuing demand-side management programs are factored into KU's load forecasts.

20. Explain why KU did not perform high and low load forecasts which would have produced an expected range of load growth given uncertainties and unforeseen changes in key forecast variables and assumptions.

21. Explain how the impact of new and planned demand-side management programs are factored into KU's load forecasts.

22. Describe the ramp function used to align weather data with billing cycles in the Residential RS Consumption Model as mentioned on page 23 of Appendix I.

23. Provide all supporting workpapers related to the load forecasts generated by the Residential RS Consumption Model shown on page 24 of Appendix I, the Residential FERS Consumption Model shown on page 28, the Industrial Consumption Model shown on page 33, and the Commercial Consumption Model shown on page 38. The workpapers should include, but should not be limited to, the provision or demonstration of the following items:

a) How each variable and data input for each model was measured;

b) The number of years of data used for each variable;

c) A list of the actual data inputs used to run each of the models;

d) The computer output associated with the regression analyses, including, but not limited to, the results of all tests of statistical significance and validity;

e) A description of alternative structural and functional forms of regression equations considered for use in these models and a discussion of why these equations were not used;

f) Evidence that all relevant explanatory variables are included in these regression equations; and

g) A thorough description of all service territory or state-specific adjustments made to data inputs.

24. Provide all workpapers related to the weather normalization of historical peak loads model as described on pages 129-135 in Appendix I. Workpapers should include, but should not be limited to, computer output related to the regression equation shown on page 130, which shows the results of all tests of statistical significance and validity of the model.

25. Explain how KU factors in appliance efficiency standards and improvements in efficiency into its load forecasts.

26. Explain why the variable LRMP is included in the winter equation for the Residential FERS Consumption Model but not in the summer equation.

27. Describe how load growth uncertainty is accounted for in KU's load forecasting process.

28. Has KU considered naturally occurring conservation in its load forecasts? Explain.

29. Explain the following statement found on page 5-20, "[b]ecause KU's rates are among the lowest in the country, many DSM programs cannot be economically justified."

30. Explain why KU can only expect 2-3 MW of interruptible load from a customer who has contracted to provide up to 14 MW of interruptible load.

31. Describe the nature of the relationship between the IS Rate and KU's time-of-day rates that serves as a deterrent to customer participation in KU's interruptible service rate as mentioned on page 7-8.

32. Explain why indirect air conditioner control techniques are not viable in reducing load in the short term as stated on page 8-9.

33. Explain why no projected energy or peak changes have been estimated for the existing demand-side management programs as stated on page 8-58.

34. Explain why projected costs of existing demand-side management programs are not available as stated on page 8-58.

35. Explain why average load reductions would be less with mechanical air conditioner control devices as compared to electrical control devices as stated on page 8-59.

36. Explain why no cost savings have been estimated for existing demand-side management programs as stated on page 8-59.

37. Explain why it is appropriate to use a demand-side management program screening study that is more than two years old for the demand-side management evaluation in this case.

38. Will KU be updating the demand-side management screening study for its integrated resource plan filing this October?

39. Has KU attempted to measure its full demand-side management potential? Explain.

40. Describe how demand-side management technology costs, measured in dollars per KW, as shown in Tables 1-6 in Appendix II were determined. Provide all supporting workpapers.

41. Are the demand-side management technology costs shown in Tables 1-6 in Appendix II total program costs or incremental costs? Explain.

42. Explain why homogeneity within the commercial and industrial sectors is necessary for the consideration of demand-side management programs for these classes of customers.

43. Explain how homogeneity of customer classes is measured and what degree of homogeneity is necessary for the implementation of demand-side management programs.

44. Explain why homogeneity within the commercial and industrial classes is lacking in KU's service territory.

45. Describe demand-side management programs which other utilities have implemented for heterogeneous commercial and industrial customers.

46. Fully describe the cost effectiveness screening criteria and assumptions used by KU in selecting the following six demand-side management technologies for further study:

a) Weather stripping

b) Caulking

c) Water heating blankets

d) Programmable controllers

e) Air conditioner cycling control

f) Water heater cycling control.

Were the costs associated with all demand-side management technologies included in the screening study compared with KU's system marginal costs in order to determine cost effectiveness? Explain why other technologies were not chosen.

47. Why are no costs listed for efficient equipment, thermal storage equipment and building and subsystem control technologies in Table 5 in Appendix II? How can these technologies be screened without program costs?

48. Why are no costs listed for several technologies, including efficient electric motors, in Table 6 in Appendix II? How can these technologies be screened without program costs?

49. The summary on the last two pages of Appendix II indicates that pilot demand-side management programs for the commercial sector may be useful and that further analysis of industrial load could identify appropriate demand-side management programs. Explain why the executive summary on the second page of that study, on the other hand, dismisses all commercial and industrial demand-side management programs because of a lack of homogeneity.

50. Based on the findings stated in the summary on the last two pages of the demand-side management screening study, fully describe all actions KU has taken and plans to take in the area of commercial and industrial demand-side management program development.

51. Did KU consider using outside data sources, such as EPRI's COMMEND model or other utility data, to develop commercial demand-side management options? Explain.

52. Why did KU not consider a low oil cost scenario in its optimization process and expansion plan?

53. Owensboro Municipal Utilities ("OMU") has stated recently in testimony before the Legislative Subcommittee on Energy that its rates will increase by as much as 60 percent between now and 1995 as a result of its compliance with the Clean Air Act Amendments of 1990. Will this price increase affect the price KU pays for OMU's wholesale power? If so, has this price adjustment been factored into KU's integrated resource plan? Explain.

54. Explain KU's capability reductions associated with compliance with the Clean Air Act Amendments of 1990 as stated on page 5-17.

55. Has KU considered an all-source bidding process in which all demand-side and supply-side resource proposals are considered simultaneously? Explain.

56. Explain why a minimum capacity margin of 16.7 percent is used in KU's resource assessment and acquisition plan, as specified on page 8-1, even though the Minimum Capacity Margin Study in Appendix VI indicates that a minimum capacity margin of 19.4 percent should be maintained by KU.

57. When will advanced battery energy storage be commercially available?

58. Has KU considered soliciting bids from qualifying facilities or other independent power producers? Explain.

59. Explain how fuel costs are estimated for use in the generation expansion models. How was the reasonableness of these forecasts assessed?

60. Has KU compared its fuel costs estimates with forecasts of other utilities or companies? If so, how does KU's estimate compare with others?

61. Describe the Clean Air Act Amendment compliance strategy that was modeled in the generation expansion plan as stated on page 8-66.

62. Describe the prospects for securing a reliable source of natural gas at the proposed E. W. Brown CT site. How would the use of natural gas affect the operation and costs of the proposed CTs?

63. Provide a thorough description of how the escalation rates shown on page 8-52 were determined.

64. Provide a thorough discussion of the compressed air energy storage and advanced battery energy storage technologies and describe why they are not viable supply options.

Done at Frankfort, Kentucky, this 26th day of June, 1991.

ATTEST:

Executive Director

PUBLIC SERVICE COMMISSION

For the Commission