COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

A FORMAL REVIEW OF THE CURRENT STATUS OF TRIMBLE COUNTY UNIT NO. 1	))	CASE NO. 9934

O R D E R

TABLE OF CONTENTS

PAGE

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

A FORMAL REVIEW OF THE CURRENT STATUS)
OF TRIMBLE COUNTY UNIT NO. 1) CASE NO. 9934

O R D E R

PROCEDURAL BACKGROUND

This case is a follow-up to Case No. 9243, An Investigation and Review of Louisville Gas and Electric Company's Capacity Expansion Study and the Need for Trimble County Unit No. 1. In the Commission's October 14, 1985 Order in Case No. 9243, it ordered that the completion of Louisville Gas and Electric Company's ("LG&E") Trimble County Unit No. 1 ("Trimble County") be delayed until at least July 1991. In the Commission's June 2, 1986 Order on rehearing in Case No. 9243, it stated at pages 6 and 7 "that in approximately one year a docket should be initiated by the Commission to allow for a formal review of the current status of the Trimble County plant."

In a May 27, 1987 Order, the Commission initiated this case to accomplish the formal review. The May 27, 1987 Order at page 1 states that "(t)he purpose of the review is to consider the most recent construction plans for Trimble County, the current load forecast and recent load experience, the timing of LG&E's financial commitments to meet its proposed completion date, any updated computer studies or analyses related to LG&E's capacity planning, as well as other relevant information." Motions to intervene were granted to the Attorney General's Utility and Rate Intervention Division ("AG"), Kentucky Industrial Utility Customers ("KIUC"), Consumer Advocacy Groups ("CAG"), and Jefferson County.

In an effort to facilitate the formal review, an informal conference was held at the Commission's offices on June 11, 1987 to discuss the availability of information needed to perform this review and to develop a procedural schedule. At the conference, the parties agreed that since LG&E's capacity planning study would not be available until September 1987 a two-phase hearing process would be reasonable. The first phase would deal with the update to the current construction plans for Trimble County and also LG&E's load forecast. The second phase would address LG&E's planning studies. At the conference, the parties also developed a procedural schedule for the first phase. In a June 25, 1987 Order, the Commission approved the two-phase procedure and the procedural schedule for the first phase.

The hearings in the first phase were conducted on August 25 and 26, 1987. At the hearing, Jack Couch, Trimble County Judge-Executive, appeared and discussed the significant contributions that the construction of this generating unit have provided for Trimble County in terms of employment and tax revenue. The parties sponsored testimony at the hearing by the following witnesses:

LG&E	James W. Carneal, Jr. Manager of Engineering, Special Construction

Patrick S. Ryan
Load and Economic Research Analyst

Kenneth L. Meredith
Manager, Economic Development and Market Research

CAG David H. Kinloch

AG Timothy M. Pryor
M. S. Gerber & Associates, Inc.

On October 16, 1987, an informal conference was held for the purpose of developing a procedural schedule and to discuss the discovery process to be used in the second phase of this proceeding. In an October 27, 1987 Order, the Commission approved the procedural schedule and discovery process agreed to by the parties at the informal conference.

Prior to the hearings, KIUC took the depositions of various personnel from LG&E, the Department of Energy ("DOE"), and the Ohio Valley Electric Corporation ("OVEC"). Those deposed included: Robert L. Royer, President, LG&E; Fred Wright, Senior Vice President, Operations, LG&E; Robert E. Lyon, Manager, System Planning & Budgets, LG&E; Ralph D. Dunlevy, Executive Vice President of OVEC; Robert Lee Johnson, Deputy Director of the Enriching Operations Division, DOE; and James C. Hall, Assistant Manager for Enriching Operations, DOE. In addition, LG&E deposed John L. Simpson, Manager of Facilities, Planning and Support Operation, General Electric Appliances and Secretary of KIUC.

The hearings in the second phase were conducted during the period from February 9 through February 24, 1988. The parties sponsored testimony at the hearing by the following witnesses:

LG&E	Robert E. Lyon Manager, System Planning & Budgets
	Dr. Marie R. Corio Applied Economic Research Company, Inc.
	Fred Wright Senior Vice President, Operations
	Brad Rives Manager, Tax Accounting
	Gerald L. Von Deylen Arthur Andersen & Company
CAG	David H. Kinloch
AG	Timothy M. Pryor M. S. Gerber & Associates, Inc.
KIUC	Randall J. Falkenberg Kennedy and Associates
	Lane Kollen Kennedy and Associates

Also at the request of the Commission Staff, William H. Thorpe, General Manager of Big Rivers Electric Corporation ("Big Rivers"), appeared at the February 22, 1988 hearing. The purpose of his testimony was to provide current information regarding the availability and price of capacity from Big Rivers.

On April 12, 1988, KIUC filed a Motion To Reopen the Record; To Conduct Further Limited Discovery; To Conduct One More Day of Hearings. This Motion was filed during the hearings in Case No. 10064, General Adjustments in Electric and Gas Rates of Louisville Gas and Electric Company. On April 22, 1988, LG&E responded by opposing this Motion. At the April 18, 1988 hearing in Case No. 10064, the Commission overruled KIUC's Motion.[1]

PHASE I

Phase I of these proceedings was limited to matters related to LG&E's update of the construction plans for Trimble County, an update of the costs to cancel or to complete the unit, and its load forecast.

Construction Plans

Mr. Carneal testified as to the current status of construction at the Trimble County site and discussed the plans to complete the construction of the generating unit to achieve commercial operation in 1991. LG&E estimated the total cost to complete Trimble County, a 495-megawatt coal-fired unit, to be $810 million. Mr. Carneal also testified that the cost to cancel construction and to restore the site would be approximately $74.4 million.[2] Of this total, $5.8 million is the cost to cancel outstanding contracts.

Mr. Pryor, witness for the AG, testified that the $74 million cost to restore the site appeared to be excessive in view of future use or value of the site. He stated that a better estimate of the cancellation and restoration cost was $22 million.[3]

---

1 Transcript of Evidence ("T.E."), Case No. 10064, Volume XV, April 19, 1988, pages 165-67.

2 Response to Commission Order dated July 10, 1987, Item No. 2

3 Pryor Prepared Testimony, filed August 7, 1987, page 20.

Load Forecast

LG&E's Electric Load Forecast, 1987-2010, was also the subject of the proceedings in Phase I of this case. Mr. Ryan of LG&E testified concerning this forecast. The LG&E forecasting methodology consists primarily of both end-use and econometric techniques. Customer surveys and trend analysis are also used for the Large Industrial component of the forecast. LG&E provided a range of forecasts - a low, a base, and a high forecast. The base forecast yields the following growth rates for the primary customer classes for the period 1985-2010: Residential .74 percent; Small Commercial and Industrial 2.26 percent; Large Commercial 2.34 percent; Large Industrial .85 percent; Public Authorities 2.02 percent.[4] The low, base, and high total energy growth rates are respectively: 1.14 percent; 1.38 percent; and 2.07 percent.[5] The corresponding peak load growth values are: .97 percent; 1.21 percent; and 1.90 percent.[6]

Compared to its previous forecasts, LG&E has made some improvements in the underlying data. In the end-use residential data base, the energy consumptions for several of the appliances are based on the weighted average energy use of the appliances shipped by manufacturers since 1972.[7] LG&E has also, through the

---

4 Ryan Exhibit 1, Exhibit 32.

5 Ibid., Exhibit 31, page 2.

6 Ibid., Exhibit 31, page 1

7 T.E., August 25, 1987, page 210.

assistance of the Bureau of Economic Research at the University of Louisville, developed projections of local economic indicators for household income and commercial employment.[8] Further, LG&E plans to develop additional data to be used with end-use models for the forecast of the commercial sector.[9]

Mr. Pryor, witness for the AG, expressed some concerns regarding LG&E's forecast. One of his concerns was that LG&E lacked industry specific detail for both the commercial and industrial forecasts.[10] Also, Mr. Pryor pointed out that LG&E relied on "unstable, unpredictable future growth of key estimated coefficients" which has resulted in optimistic forecasts for the commercial and industrial sectors.[11] Further, Mr. Pryor stated that low case forecasts were too optimistic and did not reflect the likelihood of "much lower than expected growth."[12] Similarly, he felt the high load forecast was "unduly optimistic."[13] According to Mr. Pryor, the consequence of these last two concerns was that the bandwidth around the base forecast was not symmetric and it did not realistically encompass other possible forecasts.

---

8 Ryan Exhibit 1, page iv.

9 Ibid.

10 Pryor Prepared Testimony, filed August 7, 1987, page 7.

11 Ibid.

12 Ibid., page 13

13 Ibid., page 14.

Mr. Kinloch, witness for CAG, testified that he believed LG&E's forecast was "very optimistic about future growth."[14] Of particular concern was the omission of the standards of the National Appliance Energy Conservation Act. He stated that the "forecast overestimates electric uses by not using the appliance standards."[15]

At the hearing, Mr. Ryan testified that his preliminary estimate of the impact of the new appliance standards would lower the base peak load forecast in the year 2010 by 34 megawatts.[16] Further, Mr. Ryan testified that LG&E planned to develop a much more detailed commercial model.[17]

Phase I Findings

Based upon a review of the record, the Commission finds that the forecasting methodology used by LG&E is reasonable. The blend of the end-use and econometric forecasts provides a useful means to check one forecast against the other and to develop meaningful ranges of forecasts. The resulting growth rates appear reasonable compared to recent experience and forecasts of other utilities. Further, the Commission finds that LG&E has recognized areas for improvement in its forecasts and appears to be developing plans to acquire the necessary data to realize these improvements.

---

14 Kinloch Prepared Testimony, filed August 7, 1987, page 3.

15 Ibid., page 6.

16 T.E., August 25, 1987, page 97.

17 Ibid., page 107.

Although the forecast did not give explicit consideration to the effect of the new appliance standards, the estimated impact of lowering the base load peak forecast by 34 megawatts in 2010 appears to be minimal and insignificant. Thus, the load forecast presented in Phase I provides a reasonable basis for use in the planning study which was reviewed in Phase II of this proceeding.

With regard to LG&E's plans to complete Trimble County, they appear reasonable to accomplish completion of the unit by 1991. However, since the issue of the cancellation costs was raised again in Phase II of these proceedings, this matter will be discussed later in this Order.

PHASE II

LG&E's Capacity Expansion Study

The purpose of Phase II of this proceeding was to review LG&E's Capacity Expansion Study-1987. The study was filed as Exhibit No. 1 to Mr. Lyon's testimony. This study is "the first capacity expansion study undertaken by the Company's new System Planning & Budgets Department."[18] The previous study was performed by Stone & Webster Management Consultants and was the subject of Case No. 9243. The methodology used in the present study is very similar to that used in the previous study. The methodology uses both economic and qualitative analyses. The economic analysis quantifies the present worth of revenue requirements ("PWRR") associated with various options. The

18 Lyon, Exhibit No. 1, page 2-1.

qualitative analysis considers other issues which are not easily quantified.

The study considered several alternatives to be included in its expansion plan. The study evaluated LG&E's current schedule of completing Trimble County in 1991, and in addition delays of 1 to 4 years were considered. LG&E also considered scenarios which included joint ownership and unit power sales of Trimble County. The company considered renovating the Cane Run Units 1, 2, and 3. The inclusion of combustion turbines, both simple cycle and combined cycle units, were considered. Non-utility generation was considered but not included. Load management was considered and included. Several other technologies, such as solar power, geothermal, wind power, and renewable fuels were considered but not included. LG&E also considered different capacity purchase options.

In order to quantify the value of the various expansion plans, LG&E used the Electric Generation Expansion Analysis System ("EGEAS") in conjunction with the Total and Levelized Annual Revenue Requirements ("TALARR") computer models. EGEAS optimizes generation expansion plans subject to electric reliability constraints. It also computes fixed and variable system costs for the expansion plan. TALARR computed "total annual revenue requirements and total present worth of revenue requirements for a given set of capital and operating expenditures."[19]

---

[19] _Ibid._, page 5-5.

In response to concerns raised in Case No. 9243, LG&E has changed some of the inputs used in this present study. LG&E has used historical data to determine the proper random outage rates to use in EGEAS. "For the Cane Run units, the rates now being used are lower than those used in the previous study. For the Mill Creek and Trimble County units, a slightly higher number, 20 percent, was found to be appropriate."[20] Another update is that all heat rate calculations are based on recently performed tests.[21] Also, in this study, natural gas has been used as the fuel source for all combustion turbine operations, except during January and February.[22]

LG&E also performed sensitivity analyses by changing some of the key assumptions. Those assumptions that were analyzed were the load forecast, the cost to complete Trimble County, and the price forecasts for natural gas and oil. By assigning probabilities to the likelihood of these assumptions occurring, a risk analysis was developed.

Mr. Lyon described the results of his analysis with the following statement: "As in the previous study, the completion of Trimble County Unit No. 1, for commercial operation at the earliest possible date, now 1991, was found to be the plan which affords the Company the opportunity to keep revenue requirements at a minimum and, at the same time provide a level of reliability

---

20 Lyon Prepared Testimony, page 10.

21 Ibid.

22 Ibid., page 11.

which is compatible with the needs of its customers -- both present and future." The expansion plan also calls for any additional capacity requirements beyond Trimble County to be satisfied with the construction of 75 megawatt combustion turbines. LG&E plans to reevaluate other alternatives prior to constructing the combustion turbines.

The economic or quantifiable results show that the construction of Trimble County for a 1991 in-service date assuming native loads has a PWRR of $3,636 million which is $98 million of PWRR less than any of the alternative expansion plans which involve cancellation of the unit. All of the scenarios involving further delay of the unit result in higher PWRR. The study does show that the PWRR could be reduced if LG&E "could sell power from the unit, or could sell an equity position in the unit, to another party."[23] LG&E supported its belief that it could make such sales through the testimony of Dr. Corio. Based on her study, she concluded that if Trimble County is completed as planned "LG&E may find itself in the enviable position of being able to sell energy to a power-hungry market."[24]

Mr. Lyon stated that the qualitative analysis reinforces the economic results.[25] The qualitative issues that were considered include "the risk of reduction in reliability which would result from depending on imported power, the inherent risks in several of

---

23 Ibid., page 6

24 Corio Prepared Testimony, pages 11-12.

25 Lyon Prepared Testimony, page 13.

the other options pertaining to both the price and availability of gas and oil, the uncertain capacity picture of the last half of the study period, the effect on the economic development of the community of not having sufficient capacity to serve potential new loads, and the ability of the Company with the Trimble County unit in service to sell off-system power."[26]

Numerous issues and areas of concern were raised by the intervenors in their testimony and in evidence presented at the hearings. In the following sections of this Order, the Commission will identify those major issues which were raised. An understanding of these issues is crucial in reviewing and evaluating LG&E's Capacity Expansion Study-1987.

Site Restoration Cost

For scenarios involving the cancellation of Trimble County, LG&E in its study believed it would be required to restore, as nearly as possible, the site to the same condition it was in prior to when construction began. LG&E estimated the PWRR for this restoration to be approximately $70 million. Mr. Kinloch, witness for CAG, challenged this assumption in his testimony. He contended that LG&E would not have to remove all structures at the site. To support his contention, Mr. Kinloch, in response to a data request, provided a letter from the regional Environmental Protection Agency ("EPA").[27] The letter confirmed that EPA did not require the site to be restored to its original condition.

---

26 Ibid.

27 Response to Commission Order dated January 8, 1988, Item No. 5.

On the initial day of the hearings in Phase II, Mr. Lyon stated that he did "not believe that the inclusion of all of the funds to restore the site should be part of those scenarios involving the cancellation of Trimble County Unit No. 1."[28] In a February 22, 1988 letter to the Commission, LG&E revised its estimate for restoration costs. The revised estimate included $3.3 million to abandon, $1.1 million for maintenance of stored equipment, and $776,000 of recurring cost for property taxes, insurance, security and site maintenance. LG&E further estimated that if it eventually decided to demolish the structures it would cost $19.6 million.

Tax-Related Issues

Mr. Lyon testified at the first day of the hearings that in the Capacity Planning Study the tax life for an electric generator was assumed to be 20 years. However, the Tax Reform Act of 1986 under the transitional provisions allows for a 15-year tax life if the unit is put into service before January 1, 1991. According to Mr. Lyon, the effect of this correction is to reduce by $20 million the PWRR for the scenarios where Trimble County is in service in 1991.[29]

During cross-examination of Mr. Lyon by counsel for KIUC, another tax calculation concern was raised. It was KIUC's contention that the tax adjustments associated with the

---

28 T.E., Volume I, February 9, 1988, page 63.

29 T.E., Volume I, February 9, 1988, pages 62-63.

cancellation of Trimble County had been overstated by $105 million of PWRR.[30] Mr. Kollen, witness for KIUC, testified that he had "found three specific errors"[31] in LG&E's calculation of PWRR in the scenarios where Trimble County was cancelled. In addition, Mr. Kollen identified a fourth point of disagreement which he stated "may be considered somewhat philosophical."[32] More specifically, Mr. Kollen identified the first error as a miscalculation of the accumulated deferred income tax which resulted in the PWRR for the cancellation scenario being overstated by $21.2 million.[33] The second error that Mr. Kollen detailed related to the tax rates LG&E used in calculating the tax write-off associated with cancellation. He contended that the overstatement in PWRR associated with this error was $50.6 million.[34] The third error Mr. Kollen noted was that LG&E had included a full year of return on the unamortized balance of the cancelled plant in the first year of the cancellation scenario. He contended that this was in error because LG&E assumed a July 1, 1987 cancellation date for its study and that only a 6-month return should be included. He determined that this error overstated the PWRR by $15.4 million.[35] The fourth point raised

---

30 Ibid., page 124.

31 T.E., Volume IV, February 12, 1988, page 228.

32 Ibid.

33 Ibid., page 230.

34 Ibid., page 235.

35 Ibid., page 241.

by Mr. Kollen related to the length of the amortization period for the cancelled plant. He contended that to properly compare the completion and cancellation scenarios, it was necessary to amortize the cancelled plant over 35 years instead of 10 years as LG&E did. Mr. Kollen calculated that the 10-year amortization overstates the PWRR for cancelling the plant by $17.8 million.[36] Mr. Kollen estimated the PWRR associated with cancellation to be $276.1 million,[37] as compared to LG&E's estimate of $381.2 million.[38]

The original schedule which supported LG&E's calculation of the PWRR for the scenario where Trimble County was cancelled was prepared by Steven Seelye of LG&E's Rates and Economic Research Department.[39] Since Mr. Seelye was unavailable during the hearings, Mr. Rives, Manager of Tax Accounting, provided LG&E's initial response to the arguments of KIUC. Mr. Rives agreed with Mr. Kollen's point that the schedule included a full year of return on the cancelled plant plus a 6-month return on construction work in progress and, thus, overstated the PWRR of cancelling Trimble County by $15.4 million.[40] Mr. Rives disagreed with other points raised by Mr. Kollen.

---

36 Ibid., pages 243-244.

37 KIUC Cross - Exhibit 4.

38 KIUC Cross - Exhibit 1.

39 T.E., Volume II, February 10, 1988, page 206.

40 Ibid., page 209.

On these tax-related matters, LG&E also provided the rebuttal testimony of Mr. Von Deylen, partner with Arthur Andersen & Company. He testified that both LG&E's original calculation and Mr. Kollen's calculation of the PWRR associated with cancellation were misstated. Mr. Von Deylen provided three different calculations of the PWRR associated with cancellation. In his Exhibit 1, Mr. Von Deylen assumed cancellation as of July 1, 1988 instead of July 1, 1987. Although LG&E had assumed July 1, 1987 as the cancellation date, Mr. Von Deylen felt it was unrealistic to use that date since the opportunity to cancel the plant had already passed. Mr. Von Deylen also assumed that the cost of the cancelled plant would be amortized over 10 years and not 35 years as Mr. Kollen assumed. The PWRR was calculated to be $358.8 million.[41] The intervenors objected to the inclusion of Von Deylen Exhibit 1 into the record because they viewed it as a modification to LG&E's original position concerning the date of cancellation. The Commission recognized that Von Deylen Exhibit 1 did not comport with the July 1, 1987 cancellation date that LG&E utilized in its Capacity Expansion Study-1987, but felt the exhibit provided useful information and comparisons for its deliberations on this matter and overruled the objections.

For his Exhibit 2, Mr. Von Deylen assumed a cancellation date of July 1, 1987 for determining Trimble County costs but a cancellation date of July 1, 1988 to determine the tax-related

---

41 Von Deylen Exhibit 1.

effects. Again a 10-year amortization period was assumed. The PWRR was determined to be $326.4 million.[42]

Mr. Von Deylen also prepared Exhibit 3 to be comparable to LG&E's original calculation. That is, the same assumptions that LG&E used were made, but the specific calculations were corrected. Mr. Von Deylen calculated the PWRR to be $313.3 million.[43] Thus, according to Mr. Von Deylen, LG&E's original calculation overstated the PWRR for the cancellation scenarios by $67.9 million.[44]

Amortization of Cancelled Plant Costs

LG&E assumed a 10-year amortization period for the recovery of costs if Trimble County was cancelled. LG&E further assumed that it would receive a return on the unamortized balance of those costs.

Mr. Falkenberg, witness for KIUC, testified that in order to properly compare the Trimble County completion and cancellation scenarios a 35-year amortization period should be utilized. He stated that the 35-year amortization will treat the sunk cost "in the same manner"[45] for both the completion and cancellation scenarios. Assuming a return on the unamortized balance, Mr.

---

42 Von Deylen Exhibit 2.

43 Von Deylen Exhibit 3.

44 $381.2 million minus $313.3 million.

45 Falkenberg Prepared Testimony, filed December 23, 1987, page 35.

Kollen calculated a $17.8 million difference in PWRR for a 10-year versus a 35-year amortization.[46]

Mr. Kinloch, witness for CAG, testified that LG&E should not receive a return on the unamortized balance of the Trimble County cancellation costs. All of the other intervenors took the position that a return on the unamortized balance was appropriate. He determined that if LG&E did not receive a return on the unamortized balance and the cancellation costs were amortized over 10 years the PWRR in the cancellation scenario would be reduced by $168.5 million.[47]

Capacity Purchases As An Alternative

In its Capacity Expansion Study-1987, LG&E modeled a 200 megawatt joint ownership purchase. It was assumed that the purchase was for a unit identical to Trimble County. The study found that the "price would have to be $598 per kilowatt to produce the same PWRR as the scenario in which Trimble County is placed into commercial service in 1991."[48] The study also modeled a 200-megawatt, 10-year unit power purchase. It was assumed that the purchase was from a unit identical to Trimble County. The study examined purchasing power for 6 months (May through October) each year, and for 12 months annually. The study stated that

---

46 KIUC Cross - Exhibit 4.

47 Kinloch Prepared Testimony, filed December 23, 1987, Exhibit DHK-7, page 3.

48 Capacity Expansion Study-1987, page 10-5.

"unit power purchases were found to be more costly than completing Trimble County."[49]

Mr. Falkenberg testified that LG&E's study failed "to examine the most obvious and least costly alternatives to Trimble County."[50] Mr. Falkenberg, in his analysis, included the alternatives of purchasing power from Big Rivers and OVEC. OVEC is owned by a consortium of 15 utilities which provide power to DOE for the enrichment of uranium. The sponsoring companies through the OVEC agreement are entitled to purchase the surplus power of OVEC. LG&E owns 7 percent of the stock of OVEC. Because of the reduced demand for enriched uranium and possible changes in the OVEC agreement, Mr. Falkenberg concludes that LG&E's 7 percent share, which is 165 megawatts, will be available for purchase. Mr. Falkenberg also assumed that up to 300 megawatts is available from Big Rivers at its proposed economic development rate. Based on his analysis, Mr. Falkenberg concluded that if LG&E purchased 180 megawatts from Big Rivers and 165 megawatts from OVEC, it would enjoy better reliability and reduce ratepayers' costs by $280 million when compared to completing Trimble County.[51] In his supplemental testimony, Mr. Falkenberg recognized the uncertainty surrounding the availability of power from OVEC and stated that "[u]nder the existing situation OVEC power is simply not useful

---

49 Ibid., page 10-6.

50 Falkenberg Prepared Testimony, filed December 23, 1987, page 7.

51 Ibid., page 5.

for the planning purposes of the sponsoring companies."[52] Because of this uncertainty, Mr. Falkenberg evaluated another alternative which involved the purchase of 300 megawatts from Big Rivers and no power from OVEC. His conclusion, based on the analysis of this alternative, was that LG&E could maintain the same level of reliability as compared to completing Trimble County and provide $200 million in savings.[53]

During the hearing, Mr. Thorpe, General Manager of Big Rivers, was called by the Commission Staff to testify regarding the availability of power from Big Rivers. Mr. Thorpe testified that Big Rivers did not have 300 megawatts available for long-term purchase on a firm basis. He stated that because of increased demands by the aluminum smelters approximately 200 megawatts was available.[54] He further testified that the capacity was not available at the proposed economic development rate. Mr. Thorpe stated that Big Rivers had to attain certain revenue targets with its off-system sales in order to satisfy the terms of its debt restructuring plan. Mr. Thorpe further testified that Big Rivers could not make an offer to sell capacity at the proposed economic development rate and meet its revenue requirements under the debt restructuring plan.[55]

---

52 Falkenberg Supplemental Testimony, filed January 27, 1988, page 31.

53 Falkenberg Prepared Testimony, filed December 23, 1987, page 5.

54 T.E., Volume VIII, February 22, 1988, pages 6-7.

55 Ibid., pages 11-12.

Sale of Trimble County Capacity

LG&E, in its Capacity Expansion Study-1987, modeled various joint ownership and unit power sales alternatives. Specifically, it modeled scenarios with LG&E owning 25, 50, and 75 percent of Trimble County. With regards to unit power sales, it examined 10-year and 5-year unit power sales. The sales were for 200 megawatts for either 6-month or 12-month intervals.

LG&E's quantitative analysis shows that the PWRR for Trimble County could be significantly reduced from $3,670 million to $3,373 million by a 75 percent sale of Trimble County, $3,423 million by a 50 percent sale, and $3,540 million by a 25 percent sale.[56] In the case of the unit power sales, the PWRR depended upon the price for which LG&E could sell the capacity. As the price per kilowatt month increased, the PWRR decreased.[57] Based on both the quantitative and qualitative results, LG&E concluded that "the sale of unit power from Trimble County, and the sale of a part of the plant itself, must continue to be explored. The economic analysis from this study shows advantages to the Company in both types of sales depending on the price for which it can be sold. This points to the fact that the Company must continue to seek markets for Trimble County capacity to even further reduce its revenue requirements."[58]

---

56 Lyon Exhibit No. 1, Appendix II, page 2 and pages 25-27.

57 Ibid., page 10-8 and 10-9.

58 Ibid., page 10-18.

At a confidential session of the hearing, Mr. Wright and Mr. Lyon, both of LG&E, testified to their recent "efforts to market power that would be available from Trimble County."[59] They described their efforts to finalize a diversity exchange agreement with East Kentucky Power Cooperative, Inc. and an interconnection agreement with Wabash Valley Power Association, Inc. They further described their efforts to prepare and distribute a letter which indicated capacity availability and various pricing options for which LG&E would sell power. The letter, which was accorded confidential treatment by agreement of the parties, was sent to two companies a few days prior to the commencement of the hearings in this case. Mr. Lyon testified that although the Capacity Expansion Study-1987 had been completed in September 1987, its marketing efforts were only beginning in February 1988 because it needed a "date certain" to successfully market power from Trimble County.[60] Mr. Wright further testified that the letters were sent just prior to the hearing because his "strategy was to try to pull all this together before these hearings so that I could demonstrate that LG&E is being aggressive and trying to market the power."[61]

However, in further testimony, Mr. Lyon stated that the letters that were sent indicated LG&E's desire to develop a temporary sale of capacity and not a unit power sale or a joint

---

59 T.E., Volume II, February 10, 1988, page 7.

60 Ibid., page 38.

61 Ibid., page 79.

ownership sale.[62] In fact, Mr. Wright stated that his "personal bias" was not to engage in a joint ownership or unit power sale but to develop system sales so that LG&E "would still maintain control of the unit and have that asset available for use for our customers."[63] Mr. Lyon expressed a similar sentiment when he stated that "it's a value to us, (that) those assets remain available to our consumers."[64]

Mr. Pryor, witness for the AG, provided testimony on the issue of the sale of Trimble County capacity. Mr. Pryor utilized a financial simulation model called Multiobjective Integrated Decision Analysis System ("MIDAS") to perform his analysis. Mr. Pryor stated that he attempted to employ LG&E's assumptions with a a few exceptions. He modified LG&E's low forecast and instead used a growth rate of 0.275 percent for the low case. He also modified LG&E's analysis by not modeling additional off-system sales in the scenarios where a joint ownership of Trimble County was assumed. Also, his simulation covered a 30-year period as opposed to LG&E's 20-year period followed by a 20-year extension period.[65] Based on his analysis, Mr. Pryor concluded that Trimble County should "be cancelled unless the company is willing to omit a portion of Trimble County from the rate base pending the future

---

62 Ibid., page 136.

63 Ibid., page 142.

64 Ibid., page 164.

65 Pryor Prepared Testimony, filed December 23, 1987, pages 10-11.

sale of this ownership share. This share should not be less than 3/8ths."[66]

On cross-examination, Mr. Pryor stated that depending on the type of sale, there could arise some problems of allocating costs between the parties to the sale.[67] Counsel for LG&E inquired if another way to obtain the same result could be accomplished by imputing revenues equivalent to a proportional sale of the Trimble County unit. In response, Mr. Pryor indicated he would have to give more study to that alternative.[68]

Phase II Findings

LG&E's Capacity Expansion Study-1987 represents a considerable effort by the company to update the previous study and to develop company specific data to be utilized in its analysis. The models employed are state-of-the-art models used widely in the industry. Further, LG&E has created a Systems Planning and Budget Department to perform its own planning studies. LG&E should be commended for these efforts to internalize the planning process instead of relying on outside consultants. All of these efforts will certainly increase LG&E's flexibility and ability to perform reliable and credible planning studies as needed in the future.

However, the Commission has two concerns about the procedures LG&E used to prepare the present study. First, the timing of the

---

66 Ibid., page 15.

67 T.E., Volume I, February 9, 1988, page 240.

68 Ibid., pages 101-102.

study would indicate that the study was done for the Commission rather than to assist LG&E's senior management to make its decisions regarding the fate of Trimble County. For instance, Mr. Lyon testified that his superiors could not have influenced any of the conclusions in the report because "they didn't get the results until the report was written. They couldn't have changed it had they wanted to and met the September 10 deadline."[69] The Commission understands and appreciates the efforts of LG&E's senior management to make certain that the staff preparing the Capacity Expansion Study-1987 were given the independence to investigate all reasonable options and to make conclusions on the study as they deemed appropriate. However, it seems reasonable to the Commission that if LG&E'S senior management is going to be responsible for its decision to proceed with Trimble County in 1991, and this decision is supported by this study, then senior management should at least have sufficient time to review and comment on the report prior to its submission to the Commission. To deny these managers the opportunity to review and comment and possibly make suggestions for improvements clearly gives the impression the study was done more for the Commission's benefit than to assist LG&E's senior management in making its decision regarding Trimble County.

Second, the Commission is concerned about the procedures used by LG&E to assemble the data and information necessary to prepare the study. The basis for this concern is the considerable amount

---

69 T.E., Volume I, February 9, 1988, page 240.

of time in the hearing room that was devoted to correcting the analysis for the proper tax calculations. At the initial day of the hearing, LG&E stated that the PWRR for the scenarios where Trimble County was completed in 1991 should be reduced by $20 million, because of the reduction in tax life from 20 to 15 years as allowed by the Tax Reform Act of 1986. Apparently, LG&E's Tax Accounting Department did not have sufficient time to properly review the report prior to its submission to the Commission. Also during the hearing, a considerable amount of time was needed to correct LG&E's calculation of the tax effects associated with cancellation of Trimble County. It appears that LG&E relied on its Rates and Economic Research Department to prepare tax calculations rather than seek the advice of its own Tax Accounting Department. If this study had not been submitted to the public scrutiny of the hearing room, it is quite possible these questions would not have been addressed. Thus, the Commission finds that if LG&E wants to put itself in a position to perform truly independent planning studies that can be relied upon by senior management, then proper procedures need to be developed to assure that the most accurate and best possible information is being utilized.

Concerning the alternatives to purchase capacity from OVEC and Big Rivers as presented by Mr. Falkenberg, the Commission is concerned about the viability of these alternatives. The Commission agrees with Mr. Falkenberg's assessment that the uncertainty surrounding the purchase of capacity from OVEC makes it difficult to consider this capacity for planning purposes.

Further, Mr. Thorpe's testimony made it clear that Big Rivers did not have the amount of capacity available nor was it available at the price Mr. Falkenberg assumed in his testimony. Thus, the Commission concludes that the alternatives suggested by Mr. Falkenberg are not viable and cannot be considered as an option to completing Trimble County.

With regards to the issue of further delay of Trimble County beyond 1991, LG&E's Capacity Planning Study-1987 demonstrates that there is some quantifiable penalty associated with further delay.[70] Also at the closing arguments, it was represented that there was general agreement among the parties that there was no benefit to additional delay of Trimble County.[71] The Commission agrees with this representation and finds that additional delays in the completion of Trimble County are not justified.

Concerning the quantitative results of LG&E's study, the record reflects no clear advantage for completion or cancellation of Trimble County after adjustments are made for the corrected site restoration costs and the tax-related consequences. LG&E's study as originally presented indicated that the option of completing Trimble County in 1991 was $98 million in PWRR less than the option of cancelling Trimble County and renovating the Cane Run units. At the hearing, this advantage was increased by $20 million to $118 million in PWRR to reflect the reduced tax

---

70 Lyon, Exhibit No. 1, page 10-2.

71 T.E., Volume IX, February 24, 1988, page 5.

life allowed by the Tax Reform Act of 1986. However, this advantage was greatly reduced when Mr. Lyon agreed that the site restoration cost was overstated. As indicated previously in this Order, the site restoration cost associated with cancelling Trimble County was overstated by $64.8 million ($70 million minus $5.2 million) on a continuing basis plus the possible one-time expense of approximately $19.6 million if the structures were demolished. Thus, the quantitative advantage of completing Trimble County is reduced to $53.2 million of PWRR plus some future consideration given to the cost to demolish the structures.

The quantitative advantage was further reduced when the study was corrected for the proper determination of the tax-related effects associated with cancellation of Trimble County. If Von Deylen's Exhibit No. 3, which is comparable to the original analysis put forth by LG&E, is used, the PWRR for the cancellation alternative would be reduced by $67.9 million which wipes out any advantage to completing Trimble County and yields a $14.7 million advantage to cancelling it. If Von Deylen's Exhibit No. 2, which used a cancellation date of July 1, 1988 to compute the tax-related effects, is considered, the PWRR for cancellation would be reduced by $54.8 million, which results in a $1.6 million advantage to cancelling the plant. Finally, if Von Deylen's Exhibit No. 1, which updated LG&E's original study to examine cancellation as of July 1, 1988 rather than July 1, 1987, is used, the PWRR associated with cancellation would only be reduced $22.4 million from LG&E's original estimate. This results in an advantage of $30.8 million of PWRR for completing Trimble County.

The PWRR associated with cancellation could be further reduced depending upon the regulatory treatment dealing with the amortization of the Trimble County cancellation costs. Mr. Kollen calculated a reduction in PWRR of $17.2 million if a 35-year amortization period is used instead of 10 years, which LG&E used. Mr. Kinloch estimated the PWRR for the cancellation scenario could be reduced by $168.5 million if the cancellation costs were amortized over 10 years but no return on the amortized balance was allowed.

The Commission realizes that commissions in various jurisdictions may not allow a return on the unamortized balance of cancellation costs as proposed by Mr. Kinloch, or they may use longer or shorter periods for the amortization. However, the Commission finds that the 10-year amortization and a return on the unamortized balance as proposed by LG&E are reasonable assumptions for this planning study. Nevertheless, the quantitative analysis is indeterminate when considering the factors mentioned above. The results range from a $30.8 million advantage in PWRR for completing Trimble County to a $14.7 million advantage to cancel Trimble County. When one considers that the total PWRR for completing Trimble County is approximately $3,600 million, it can easily be determined that the results derived in the quantitative analysis are not conclusive.

In considering whether the completion of Trimble County in 1991 is in the best interest of LG&E and its ratepayers, it is necessary to give consideration to LG&E's possibilities of selling capacity to other utilities. LG&E's Capacity Expansion Study-1987 concludes that "the sale of unit power from Trimble County, and the sale of a part of the plant itself, must continue to be explored. The economic analysis from this study shows advantages to the Company in both types of sales depending on the price for which it can be sold. This points to the fact that the Company must continue to look for markets for Trimble County capacity to even further reduce its revenue requirements."[72] The Capacity Expansion Study performed by the consulting firm of Stone & Webster for LG&E in 1984, and which was the subject of the hearings in Case No. 9234, reached similar conclusions. The report recommended that LG&E "(m)ake every effort to sell up to a maximum of 25% from Trimble County Unit 1 on a joint ownership basis."[73] In this case, LG&E has presented the testimony of Dr. Corio to support its assumption that there will be a market for Trimble County capacity in the early to mid-1990s. Several intervenors have raised some serious challenges to Dr. Corio's study and its conclusions. The Commission is also aware that other electric companies, including another Kentucky company, have also relied on Dr. Corio's analysis to support their contention that there will be a market for their capacity in the future. This certainly raises the concern that if several companies view themselves in a similar position to sell capacity, then one must be concerned as to the kind of market LG&E will confront in the

---

72 Lyon, Exhibit No. 1, page 10-18.

73 LG&E Capacity Expansion Study Volume II - Technical Report, page 55.

early to mid-1990s. In view of this information, the Commission finds that it is unreasonable for LG&E to basically assume there will be a buyers' market in the early to mid-1990s for the Trimble County capacity. It is imperative that LG&E work to develop these markets.

However, the Commission is concerned about LG&E's interest and ability to develop these markets for a joint ownership or unit power sale of Trimble County capacity. Although both the 1984 and 1987 capacity expansion studies indicated the need for LG&E to make every effort to market the power, its efforts to date have been minimal. The Commission must seriously question the efforts LG&E will put forth to sell Trimble County capacity on a long-term basis through either joint ownership sale or a unit power sale in light of LG&E's testimony that it has a "personal bias" against them. The Commission finds that it is necessary to develop some form of rate-making treatment that will assure the ratepayers that they will receive the benefits of the reduced revenue requirements that would result if such a sale occurred.

Mr. Pryor has proposed that at least three-eighths of Trimble County be excluded from rate base pending the future sale of this amount. Mr. Pryor's results are derived by assuming an arbitrarily determined low growth rate for demand. His low growth rate for demand was determined by calculating the difference between LG&E's base and high case forecasts and subtracting this amount from the base case forecast. The result is a low case forecast that has the same symmetry as the high case forecast around the base case forecast. There is no sound methodological basis for this low case forecast. The Commission cannot accept the results of the study because of this low case load forecast. The Commission has stated previously in this Order that it finds both the methodology used by LG&E to prepare its load forecast and the results derived to be reasonable. Although Mr. Pryor has proposed a rate-making alternative to assure that the ratepayers receive the benefits of a joint ownership sale, his proposal to disallow at least three-eighths is unreasonable given his low case load forecast. Thus, the Commission must reject his proposal.

Based on its review of the evidence in this case, the Commission finds that LG&E has a need for capacity in the early 1990s. However, the Commission also recognizes that Trimble County provides LG&E with considerably more capacity than is actually needed, especially in the early years of Trimble County's service.[74] The Commission believes it is this excess capacity that has caused the quantitative analysis results to be inconclusive. Thus, the Commission finds that Trimble County should be completed by 1991 as presently planned, only if some rate-making treatment is developed to protect the ratepayers in the event LG&E is unsuccessful in its efforts to sell Trimble County capacity. Thus, in order to assure the ratepayers that completing Trimble County in 1991 is clearly in their best interests, the Commission finds that a disallowance of 25 percent of Trimble County is necessary.

---

74 Lyon, Exhibit No. 1, page 3-2.

LG&E's own Capacity Expansion Study-1987 examines various joint ownership sale arrangements varying from 25 percent to a 75 percent sale of Trimble County. These sales reduce the PWRRs associated with the completion of Trimble County. The Commission has determined that a disallowance for rate-making purposes of 25 percent of Trimble County is reasonable in view of the reduced revenue requirements presented in the capacity study. In addition, the Commission finds that by LG&E keeping 75 percent of Trimble County, it maintains control of the majority of the unit and also retains the advantages it has identified in its qualitative analysis.

The Commission must consider how to best accomplish the disallowance of 25 percent of Trimble County through some rate-making mechanism. Mr. Pryor has suggested the possibility of a complete exclusion of the disallowed capacity from rate base. During the cross-examination of Mr. Pryor, the suggestion was made that the revenues attributable to a joint ownership sale could be estimated and imputed as a revenue offset for rate-making purposes. The Commission believes that there are several rate-making alternatives available to accomplish the disallowance of 25 percent of Trimble County which have not been carefully considered. In order to further investigate these alternatives, the Commission finds that another proceeding should be established in the immediate future to allow a full investigation into these matters.

ORDERS

IT IS THEREFORE ORDERED that:

1. A disallowance of 25 percent of Trimble County shall be accomplished through a rate-making alternative, which will assure the ratepayers of LG&E that they will receive the benefits of the reduced revenue requirements which would result if LG&E sold a 25 percent joint ownership interest in Trimble County as described in its Capacity Expansion Study-1987.

2. The Commission shall establish, as soon as possible, a separate proceeding to further investigate the various rate-making alternatives which are available to accomplish the result described in ordering paragraph 1.

Done at Frankfort, Kentucky, this 1st day of July, 1988.

PUBLIC SERVICE COMMISSION

Richard D. Heman Jr.
Chairman

Robert M. Davis
Vice Chairman

George N Williams, Jr.
Commissioner

ATTEST:

Executive Director