COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

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| AN INVESTIGATION AND REVIEW OF LOUISVILLE GAS AND ELECTRIC COMPANY'S CAPACITY EXPANSION STUDY AND THE NEED FOR TRIMBLE COUNTY UNIT NO. 1 | ) | CASE NO. 9243 |

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## O R D E R

### PROCEDURAL BACKGROUND

On October 19, 1978, Louisville Gas and Electric Company ("LG&E") was granted a certificate of convenience and necessity and a certificate of environmental compatibility to construct two 495 megawatt ("MW") coal-fired steam turbine generating units in Trimble County. LG&E's plan at the time the certificates were granted was to complete construction of Trimble County Unit No. 1 by 1983 and the second unit by 1985. In 1978 the projected cost for the completed construction of both units was approximately $542.6 million. Since receiving the certificates LG&E has cancelled the second unit at Trimble County, delayed the completion of the first unit to 1988 and raised the cost estimate for Trimble County Unit No. 1 to $737.9 million.

During LG&E's last general rate case, Case 8924, General Adjustment in Electric and Gas Rates of Louisville Gas and Electric Company, LG&E's plans concerning Trimble County Unit No. 1 were carefully reviewed. This review was a major issue because several of the intervenors in that case challenged the continuation of a cash return on LG&E's construction work in progress ("CWIP") balance as of the end of the test year. One of the objections of the intervenors was that there was considerable uncertainty about the construction schedule and eventual completion of Trimble County, and therefore, they argued, the continuation of a current return on the CWIP balance was not justified. In fact, one witness testified that this policy encouraged LG&E to not make a decision on completion of the unit. In response, LG&E's management stated that it believed an additional study was required before deciding how to proceed with Trimble County construction. In the final Order in Case 8924, the Commission expressed its interest in reviewing that study and decided to maintain its historical CWIP treatment for LG&E.

In November 1984, LG&E filed a completed capacity expansion study prepared by the consulting firm of Stone & Webster ("S&W"). On December 20, 1984, the Commission issued an Order establishing this case to investigate the S&W study and the need for Trimble County. Motions to intervene were granted to the Attorney General's Consumer Protection Division ("AG"), Kentucky Industrial Utility Customers ("KIUC"), Consumer Advocacy Groups ("CAG"), the City of Louisville, Jefferson County, Alcan Aluminum Corporation, ARCO Metals Company and Airco Carbide. To determine appropriate procedures for the review of the S&W study, a formal conference was held January 16, 1985. At the conference, intervenors requested clarification regarding the purpose of this case and the issues to be explored.

In response to intervenor requests for clarification, the Commission issued an Order on February 7, 1985, stating that "the primary issue in this proceeding is whether the Trimble County Unit No. 1 should be completed and, if so, when it should be completed."[1] That Order also established a procedural schedule for this investigation. In conformance with that schedule LG&E witnesses and their consultants testified at hearings on February 28, and March 1, 1985; and intervenors testified on April 10 and 11, 1985. LG&E also presented rebuttal testimony on April 11, 1985. The Commission requested that any additional rebuttal testimony be filed in written form on April 22, 1985.

During the course of the hearings several differences regarding the assumptions and inputs to the S&W computer models arose. In an effort to quantify the impacts of changing certain assumptions, LG&E agreed to have S&W perform several reruns of the models using various assumptions. On May 16, 1985, a formal technical conference was held at the Commission's offices to discuss additional computer runs which LG&E would have S&W prepare. The additional computer runs were filed on June 27, 1985.

On July 10, 11 and 12, 1985, a final round of hearings was conducted. Four issues were addressed at these hearings: the witnesses offering written rebuttal and surrebuttal testimony were cross-examined; the additional computer runs were reviewed;

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[1] Order in Case No. 9243, Louisville Gas and Electric Company, entered February 7, 1985, pages 1 and 2.

witnesses were cross-examined concerning the information which LG&E provided concerning the cost of extended delay in completing Trimble County; and LG&E's recently adopted, revised load forecast. On April 19, 1985, LG&E notified the Commission by letter that it had adopted as its official load forecast a forecast which had been recently performed by S&W. The base load forecasts had been filed on February 8, 1985, and the sensitivity analysis results had been filed on February 27, 1985.

At the July 11 hearing Judge Clyde Greenwood, County Judge Executive of Trimble County, and Bill Caylor, Vice President and General Counsel for the Kentucky Coal Association, spoke in favor of the completion of Trimble County Unit No. 1. A written statement prepared by Fred Hauck, Robert Gray and Harold Cassidy, all members of the group, Save The Valley, was presented to the Commission at the July 10 hearing. The Commission appreciates the willingness of these individuals and groups to present their concerns to the Commission. The Commission is aware that its decision has an impact on the communities and organizations represented by these individuals and groups, and has given careful consideration to their concerns.

On July 24, 1985, written briefs were filed by LG&E, KIUC, AG and CAG and oral arguments were presented on July 26, 1985.

S&W CAPACITY EXPANSION STUDY

In the study S&W describes its analysis as both quantitative and qualitative. The quantitative analysis is composed of three phases: economic, sensitivity and risk analyses. S&W describes each phase as,

> First, the economic analysis consists of developing expansion plans which result in the lowest energy costs to LG&E's customers in the long run. Second, the sensitivity analysis determines the impact on the base economic results due to changes of the major independent variables. Third, the risk analysis provides a structured approach for assessing the uncertainty inherent in the decision-making process.[2]

The qualitative analysis considers non-economic factors such as dependence on oil or natural gas, potential revenue from off-system sales, effects of changed environmental regulation, or management of established work force. The quantitative and qualitative analyses are melded to develop a strategic expansion plan.

The quantitative analysis begins by gathering data on load and energy forecasts, and on existing generating units and their operating characteristics. Numerous assumptions are also developed concerning costs of fuels, price and availability of energy and capacity from other utilities, as well as financial projections. Once this information base is assembled, alternative expansion scenarios are developed. A total of 51 plans are used in the S&W study originally filed. In order to compare the various plans, the present worth revenue requirements associated with each plan are calculated. The variable costs are determined through use of a computer simulation model called the Electric Generation Expansion Analysis System ("EGEAS"). With regard to fixed or capital costs, not all costs are included. Only the

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2 Capacity Expansion Study, Volume II - Technical Report, November 1984, Stone & Webster Management Consultants, Inc., page 4.

incremental fixed costs are included in the calculation. The total present worth of annual revenue requirements, variable costs plus incremental fixed costs, are determined by a S&W revenue requirements model called Total and Levelized Annual Revenue Requirements ("TALARR"). These values form the basis for the economic analysis. To prepare the sensitivity and risk analysis, changes in load forecasts, costs to construct Trimble County Unit No. 1 and fuel prices are varied.

Based on the quantitative analysis and after consideration is given to the non-economic issues, S&W recommended a seven point strategic expansion plan. Their recommended plan, which was adopted by LG&E, contained of the following points:[3]

- Complete the Trimble County Unit 1, but delay the scheduled in-service date by one year, to July 1988.
- Make every effort to sell up to a maximum of 25% from Trimble County Unit 1 on a joint ownership basis (life-of-unit).
- Aggressively market additional capacity sales, such as: unit power, economy, short-term and limited-term power.
- Install combustion turbine capacity as required in the future to meet reserve and reliability criteria.
- Accommodate capacity from cogeneration and small power producers as it materializes by deferring or replacing future combustion turbine capacity.
- Implement load management when it becomes economically feasible, and defer or replace future combustion turbine capacity as required.
- Review the results and recommendations of this study when the new load forecast is available in the Spring of 1985.

[3] Ibid., pages 55-56.

## MAJOR CONCERNS RAISED BY INTERVENORS

The intervenors, through cross-examination and direct testimony have identified several concerns regarding the S&W Capacity Expansion Study. This section of the Order will identify several of the major concerns which were raised by intervenors.

One of the concerns raised was the assumption used by S&W that all future combustion turbine generators would be fired by fuel oil. Intervenors expressed their belief that some natural gas would be available for use in the additional combustion turbines, and that natural gas would be cheaper than fuel oil. Stephen J. Baron, Vice President of Kennedy and Associates, witness for KIUC, prepared an analysis which demonstrated that a 1983 price of $3.80 per mcf for natural gas was reasonable.[4] This compared to the assumption used by S&W that the price of fuel oil and natural gas were comparable. The analysis of Fred Wright, Vice President of Planning and Market Services, indicated the price under LG&E's current contract would be $5.88 per mcf[5] and thus supported S&W's assumption.

Another concern related to the equivalent forced outage rates ("EFOR") used by S&W in the study. S&W, upon advice from LG&E personnel, constrained the capacity factor for the Mill Creek units and Trimble County unit to a limit of 70 percent. This

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[4] Baron prepared testimony, Exhibit SJB-5.

5 Transcript of Evidence ("T.E."), March 1, 1985, page 272.

constraint was supplied to the computer model by raising the EFOR for the units above levels consistent with LG&E's historical experience. David H. Kinloch, witness for CAG, provided historical EFORs in his testimony for comparison to those used by S&W.[6]

Another assumption S&W used in the study was related to the scenarios which involved cancellation of the Trimble County unit. S&W assumed the investment in the plant would be amortized over 10 years and included in revenue requirement. S&W did not include a return on the unamortized balance. Randall J. Falkenberg, Vice President with Kennedy and Associates, witness for KIUC, testified that for analytical consistency in scenarios involving cancellation of Trimble County, the cancellation cost should be amortized over a period similar to the alternative to which it was being compared, or in this case of completing Trimble County, depreciated over 31 years.[7] Mr. Falkenberg amortized the sunk cost over 31 years and included a return on the unamortized balance.

In the capacity expansion study, S&W assumed a higher growth rate in peak demand and energy forecast than LG&E had previously forecast. LG&E had forecast growth rates in peak demand of 1.6 percent in the high case, .7 percent for the low and 1.1 percent for the base case. Further, S&W assumed the load factor would increase by the year 2003 to 52 percent in the base and low

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[6] Kinloch prepared testimony, Exhibit 5.

[7] Falkenberg prepared testimony, pages 24 and 25.

cases, and to 54 percent in the high case. LG&E had previously assumed a load factor of 50 percent. Also in the risk analysis, S&W assigned a 30 percent probability to both the high and low forecasts and a 40 percent probability to the base forecast. Both Mr. Kinloch, witness for CAG, and Mr. Baron, witness for KIUC, challenged some of these assumptions. Mr. Kinloch suggested the S&W forecasts in the study were too high and that the forecast recently prepared for the Commission by Energy Systems Research Group, Inc., ("ESRG") should be considered. ESRG's forecasts ranged from -.8 percent in the low case to 1.9 percent in the high case. Mr. Baron found the previous LG&E forecasts were more reasonable than the assumed S&W high forecast. Also Mr. Baron believed S&W had assigned too large a probability for the high forecast.

Another area of concern related to S&W's selection of capacity expansion scenarios. Among the scenarios included by S&W were Trimble County completed and in-service in 1987, 1988, 1989, 1990, 1993; completing Trimble County and selling 25, 50, 75 and 100 percent through a joint ownership arrangement; completing Trimble County and selling 25, 50, 75 and 100 percent through a 10-year unit power contract; cancelling Trimble County and installing combustion turbines; cancelling Trimble County and rehabilitating Cane Run units 1, 2 and 3; purchasing 200 megawatts at a price of $1,757 per kilowatt under a joint ownership purchase; purchase of 150 megawatts at $8 per kilowatt per month from East Kentucky Power Cooperative ("EKP") for 7 years for the months of April through November of each year;

adding 100 megawatts of cogeneration over the next 4 years; and adding 68 megawatts of directly controlled capacity through load management. Mr. Kinloch of CAG contended S&W's analysis could have been strengthened by combining several of the options into a capacity expansion plan. For instance, the alternative of cancelling Trimble County and installing combustion turbines could have been combined with the 100 megawatt addition of cogeneration option. Also Mr. Kinloch believed that conservation had not been given adequate consideration.[8]

With regard to the joint ownership purchase of 200 megawatts at $1,757 per kilowatt, which was based on cost estimates for power from the recently completed Wilson unit of Big Rivers Electric Corporation ("BREC"), several intervenors questioned why lower priced capacity was not considered. LG&E was extensively cross-examined extensively on the extent of its efforts to negotiate for a lower price from BREC. There was also considerable cross-examination concerning LG&E's attempts to identify and negotiate for lower priced capacity in the region.

Mr. Falkenberg, witness for KIUC, testified that the S&W study indicated there was considerable merit to further examine the alternative of an extended delay in the completion of Trimble County Unit No. 1.[9] He contended that an extended delay would provide some flexibility to deal with the uncertainty of the future demand. Thus, "if the high load growth case materializes,

[8] Kinloch prepared testimony, page 29.

[9] Falkenberg prepared testimony, page 17.

you eventually build Trimble County, whereas, if the low and base load forecast cases materialize, you eventually decide to cancel Trimble County."[10] Mr. Falkenberg recognized that this option would add to the cost of completing Trimble County, but it could also provide savings.

Carl G. K. Weaver, economist and principal with M. S. Gerber & Associates, Inc., testified on behalf of the AG. Mr. Weaver testified that Trimble County Unit No. 1 should be cancelled. This recommendation was based on his interpretation of the S&W report. He was critical of the probability weightings assigned by S&W to the likelihood of the fuel prices or the construction budget being higher or lower than assumed for the base case analysis. To reinforce his interpretation, Mr. Weaver used a financial computer model to evaluate the financial implications for LG&E of cancelling Trimble County. In his analysis, the abandonment cost was shared equally between ratepayers and stockholders and a 15-year write off period was used. Generally, Mr. Weaver concluded that in the case of cancellation of Trimble County, LG&E was not unduly impaired financially and the LG&E ratepayers benefited significantly.

## RESPONSE TO THE INTERVENORS' CONCERNS

To respond to concerns raised by the intervenors, LG&E offered to have S&W rerun some of the computer analyses to attempt to quantify the impact of changing certain key assumptions. On May 16, 1985, a technical conference was held to iden-

10 T.E., April 19, 1985, page 213.

tify which additional computer runs would be illustrative. LG&E also provided rebuttal testimony in response to some of the concerns. Additionally, LG&E provided a detailed cost estimate for an extended delay in the construction of Trimble County. The relevant present worth revenue requirements for the original capacity expansion study and the revised figures are provided in Appendix 1 to this Order.

In response to the criticism for considering only fuel oil to power additional combustion turbines, LG&E developed a computer model to determine how much natural gas would be available for such use without ratcheting up the demand charge under its current gas supply contract. This analysis showed that during the summer months additional gas would be available for the turbines. S&W reran the EGEAS and TALARR computer models using the additional availability of natural gas for two scenarios: completing Trimble County in 1988; and cancelling Trimble County and installing combustion turbines. The results show some savings. (See Appendix 1.) In fact, prior to including a return on the unamortized balance, the all-combustion-turbine option has a lower present worth revenue requirement (Case 13: $3.502 billion) than completing Trimble County in 1988 (Case 12: $3.527 billion).

In response to the concern regarding the historical EFOR for the Mill Creek units, LG&E had S&W rerun the Trimble County in 1988 and all combustion turbine scenarios assuming a 15 percent EFOR. The scenarios were run with the original forecast and the revised forecast. The results are provided in Appendix 1, Cases 8 through 11.

In rebuttal testimony, Robert L. Royer, president of LG&E, testified that he agreed with Mr. Falkenberg, witness for KIUC, that S&W should have included a return on the unamortized sunk costs.[11] Mr. Royer and Mr. Falkenberg differed over the length of the amortization period. In Mr. Royer's analysis, a 10-year amortization period was used as opposed to the 31-year period suggested by Mr. Falkenberg. According to Mr. Royer's testimony including a return on the unamortized balance would add $171 million to all of the capacity expansion scenarios which involved the cancellation of Trimble County Unit No. 1. Due primarily to the longer amortization period, Mr. Falkenberg derived a value of $106 million associated with including a return on the unamortized balance of the sunk cost. Mr. Royer stated that the return on the unamortized balance is a cost to LG&E's stockholders and he was obliged to consider it in his decision.[12] Including a return on the unamortized balance is a significant change from S&W's original assumption of a 10-year amortization of sunk costs with no return. For instance, Case 13, which incorporates the revised forecast and the limited use of natural gas for combustion turbines, is a lower cost option than Trimble County in 1988 before the return on the unamortized balance is included (see Appendix 1).

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[11] T.E., April 11, 1985, page 144.

[12] Ibid., page 145.

Regarding concerns about the load forecast, as explained earlier in this Order, LG&E informed the Commission by letter dated April 19, 1985, that the new forecasts prepared by S&W had been adopted by the company. The forecasts were filed in this docket in February 1985. The revised growth rates in peak demand are .9, 1.3, and 2.4 percent for the low, base and high case. The projected load factor by 2003 is 53.2 percent. The effect of the higher forecast is illustrated in Appendix 1, Cases 1 through 7, in the first two columns. The results are similar except for Case 7 -- 150 megawatt unit power purchase from EKP -- which in the original study was a lower cost option than Trimble County in 1988. It is a higher cost option using the new forecast.

With regard to the $1,757 per kilowatt price S&W used in its analysis when considering purchases of capacity, S&W prepared a break-even analysis to determine the price LG&E could pay for 200 megawatts of capacity and break even with the cost of completing Trimble County in 1988. The break-even analysis was presented by Mr. Royer of LG&E in his rebuttal testimony. Using the original forecast and assuming no return on the unamortized balance, the break-even analysis showed that if LG&E purchased capacity at $1,100 per kilowatt or less, the present worth revenue requirement would be less than the revenue requirements associated with completing Trimble County in 1988. If the return on the unamortized balance is included, LG&E would have to purchase capacity for less than $320 per kilowatt to provide any benefit to the ratepayers. The break-even analysis was updated for the revised forecast. The break-even point was $780 per kilowatt, excluding a return on the unamortized sunk cost, and zero including a return.

LG&E also requested that S&W rerun the EGEAS and TALARR models assuming the 200 megawatt joint ownership arrangement was an 8-month seasonal purchase. The results from these computer runs are presented in Cases 16 and 17 of Appendix 1.

Finally, in response to a Commission Order, LG&E provided a detailed cost estimate to delay the completion of Trimble County until 1996. LG&E estimated the cost to complete Trimble County for a 1996 start-up at $1,041 million. This compares to the current estimate for a 1988 start-up of $738 million. Exhibit 5 of the S&W Capacity Expansion Study presented cost estimates for various in-service dates. The values in Exhibit 5 were used by S&W in evaluating the effect of a delay on the completion of Trimble County. Appendix 1 shows that S&W estimates the impact of a 5-year delay to 1993 at an additional $44 million (Case 2: $3.644 billion minus Case 1: $3.6 million) of present worth revenue requirement.

In response to the concerns raised by Mr. Weaver, witness for the AG, LG&E challenged his assumptions through cross-examination. None of the concerns presented by Mr. Weaver were included in the additional computer runs prepared by S&W.

IMPACT OF THE REVISIONS ON THE STRATEGIC EXPANSION PLAN

Wah Sing Ng of S&W, witness for LG&E, was cross-examined in considerable detail about the impact of the revisions discussed above on S&W's recommended strategic expansion plan.[13] Mr. Ng stated that after the revisions the results were similar and he would continue his recommendations concerning the strategic expansion plan.

FINDINGS

1. COOPERATION

This proceeding was certainly not a typical case before the Commission. It required unusual procedures, an extraordinary amount of data and workpapers, and unprecedented cooperation among the parties. The Commission greatly appreciates LG&E's responsiveness to numerous and extensive data requests, and the company's willingness to come forward and have its capacity expansion study reviewed and evaluated in a public forum. The Commission also recognizes and appreciates the efforts of the intervenors. The Commission is aware that the procedural schedules were compact and imposing; it is clear, however, that each of the intervenors has contributed to this case in a significant manner.

2. LOAD FORECAST

One of the key ingredients of a capacity expansion study is a load forecast. Unfortunately, in this case there were two sets

[13] T.E., July 11, 1985, pages 4-24.

of forecasts, both provided by LG&E and S&W. LG&E's adoption of the new forecast in April 1985, certainly added to the data in this case. Much of the analysis prepared for the November 1984 Capacity Expansion Study had to be reworked when the revised forecast became available.

Nevertheless, the basic methodology behind the new forecast seems reasonable and clearly advances the forecasting techniques previously used by LG&E. The blend of the end-use and econometric approaches should be useful, especially until better and more disaggregated demographic, load research and appliance saturation data is developed. The Commission is concerned about the subjective nature of so many of the inputs to the end-use model. The cross-examination by CAG of Alfred Calafiore of S&W, witness for LG&E, clearly indicated that many of the inputs were based on experience and judgment. Given the paucity of data, experience and judgment may be necessary; however, the question becomes how this experience and judgment can be transferred to LG&E personnel so they can continue the forecasting effort without continuously relying on S&W. LG&E should report in its next rate case on its efforts to implement the S&W forecasting methods and on its progress and plans to develop the necessary data.

3. S&W STRATEGIC EXPANSION PLAN

The S&W strategic expansion plan recommends that LG&E complete Trimble County Unit No. 1 in 1988, make every effort to arrange a joint ownership sale for up to 25 percent of Trimble County, and aggressively market additional capacity sales.

During cross-examination, Mr. Ng was asked whether he would consider recommending a delay in the in-service date of 1988 for Trimble County if he knew LG&E could not sell 25 percent from the unit. Mr. Ng stated that he did not believe he would recommend a delay because "there are other factors that come into play that should be considered with the additional delay of Trimble County that may mitigate some of the penalty that may be involved [in] not being able to sell that amount of capacity."[14] These other factors, referred to during the proceedings as intangible factors, were identified as the reaction of the financial community, as well as the following factors listed in the report:[15]

- It causes the least amount of interruption of the already established work force at the site
- It results in the least effect on the existing contracts for materials and equipment
- It lessens the exposure to deterioration of equipment and structures already on site
- It reduces the exposure to future escalation for materials and labor
- It minimizes the exposure to future environmental and other regulatory changes.

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[14] T.E., July 11, 1985, page 12.

[15] Capacity Expansion Study, Volume II - Technical Report, November 1984, Stone & Webster Management Consultants, Inc., page 54.

With regard to these intangible factors, Mr. Ng testified that he was not "able to quantify those at this point."[16] Thus, the S&W recommendation is dependent to a large extent on these unquantified, intangible factors. When Mr. Ng was questioned further on this point, he agreed that a delay in the in-service date of Trimble County Unit No. 1 beyond 1988 was "not an unreasonable conclusion"[17] if one assumed the dollar magnitude associated with the intangible factors was not significant.

The S&W strategic expansion plan raises three concerns for the Commission. First, from a statewide perspective it appears that Kentucky has ample generating capacity available. This point is confirmed in a recent report prepared by the Kentucky Joint Committee on Electric Power Planning Coordination entitled Summary of Loads, Capacities and Capacity Margins of the Member Companies. The Kentucky Joint Committee on Electric Power Planning Coordination consists of the following: Big Rivers Electric Corporation; East Kentucky Power Cooperative, Inc.; Kentucky Power Company, an American Electric Power Company subsidiary; Kentucky Utilities Company; Louisville Gas and Electric Company; and Union Light, Heat and Power Company, a Cincinnati Gas and Electric Company subsidiary. Pages C-1 and C-8 provide projected peak demands, capabilities and capacity margins on a statewide basis for the summer and winter seasons.

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16 T.E. July 11, 1985, page 19.

17 Ibid., page 24.

These pages show 10-year projections of capacity margins, which are calculated by subtracting total demand from total capability and dividing the difference by total capability, ranging from 22 percent to 31 percent for the summer season and 24 percent to 31 percent for the winter season. These calculations include Trimble County as completed in July 1988. If the 495 megawatt capacity from Trimble County is excluded from these calculations, the capacity margins for the next 10 years range from 18.3 percent to 30.9 percent for the summer season and 20.5 to 31.3 percent for the winter season. These figures support the observation that there is adequate generating capacity available in Kentucky for the next decade even without Trimble County.

Second, the Commission is concerned about including 100 percent of Trimble County costs in rate base with the hope that LG&E will mitigate some of this impact on ratepayers by selling capacity to other utilities as suggested in the strategic expansion plan. These potential sales are identified by S&W as one of the intangible benefits of completing Trimble County in 1988. However, it seems quite probable that this intangible benefit may never be realized. Certainly the results that Big Rivers Electric Corporation has achieved in its efforts to sell capacity from the Wilson Unit illustrate how difficult this goal can be. Further, it appears that LG&E has not positioned itself to become active in the market for off-system sales and purchases. The record indicates that LG&E's marketing efforts to date consist mainly of a mail survey of neighboring utilities, and some follow-up correspondence and phone communication. During cross-examination, LG&E seemed to have limited knowledge of recent capacity sales in the region.[18]

Third, the Commission believes that the interests of the ratepayers of LG&E and the other utilities in Kentucky would best be served by considering options developed with a statewide perspective. The options and alternatives analyzed by LG&E and S&W do not thoroughly address these concerns. LG&E may have concluded that as a single company it would be too difficult to develop options from a statewide perspective. The Commission, however, believes that it does not have the luxury of sitting back and hoping that the interests of all the ratepayers in Kentucky will be served if each individual company pursues its own interests.

The Commission disagrees with S&W's recommended strategic expansion plan. Viewing the S&W analysis from the broader statewide perspective, which the Commission is required to do, the Commission believes the potential benefits to the Kentucky ratepayers offset the intangible factors considered by S&W and LG&E. Thus, the Commission finds that a delay of at least 3 years beyond the presently planned 1988 in-service date of Trimble County Unit No. 1 is reasonable. The Commission recognizes that a delay will add to the cost of completion. However, the Commission believes the costs will be outweighed by the benefits that

[18] T.E., March 1, 1985, pages 301, 304.

accrue to LG&E ratepayers, as well as other Kentucky ratepayers, by using the current abundant generating capacity in Kentucky to develop a statewide planning strategy. An estimate of the costs of delay as measured in additional present worth revenue requirement are approximated by S&W and presented in Appendix 1. In the event the delay extends to 1993, a comparison of Cases 1 and 2 revised for the higher load forecasts indicates a difference of only $44 million. This amounts to an approximate 1.2 percent increase in present worth revenue requirements.

The time to take action on these matters is now. Once Trimble County is completed, the alternatives to develop a more comprehensive, statewide view of planned electric capacity additions will be severely limited, and the opportunities to realize any of the associated benefits will be foregone. Thus, the Commission will take advantage of this period of delay to investigate planning alternatives from a statewide perspective.

During the delay in the in-service date of Trimble County the Commission intends to pursue the initiative it began in Case No. 8666, An Investigation Into Alternative Load Forecasting Methods And Planning Considerations For The Efficient Provision Of Electric Generation And Transmission Facilities. If the utilities are unwilling to develop planning options from a statewide perspective, then the Commission will. Similar efforts have begun or have been legislated in the neighboring states of Ohio and Indiana. The 1984 report prepared for the Commission in Case No. 8666 by Energy Systems Research Group, Inc., ("ESRG") indicates that Kentucky ratepayers can potentially save millions of dollars if statewide planning options are pursued. The utility companies in the state have challenged the ESRG results and in response have stated that they believe the benefits identified in the report are overstated and the costs are understated. Given the potential savings, the Commission is compelled to follow up these initial studies to determine more precisely the magnitude of the benefits and costs, and to evaluate the implementation of appropriate alternatives. The Commission intends, as soon as possible, to develop, analyze, and implement statewide options that will be beneficial to Kentucky ratepayers. This will be accomplished through a cooperative effort with all interested parties, including the utilities, and through the services of an independent consultant. These options include targeted conservation, aggressive load management, additional bilateral exchanges among the state's utility companies, marketing the state's generating capacity to other regions of the country, joint ownership of generating capacity, installing alternative types of capacity, refurbishing older generating units, and establishing a centrally dispatched pooling arrangement.

In addition, the Commission notes that although in LG&E's last rate case the historical treatment of allowing a current return on CWIP was continued, that Order indicated that this treatment would be considered again in LG&E's future rate cases. The Commission finds that the record herein, coupled with the directive that Trimble County should be delayed at least 3 years, should place LG&E and other parties on notice that the continuation of the current treatment of allowing a return on further additions to CWIP should not be taken for granted, but will be an issue in LG&E's future rate cases.

Further, LG&E should provide monthly reports describing the activity at the Trimble County site. It is anticipated that the construction expenditures will be minimal during the delay. Mothballing expenditures may be significant; but the Commission expects LG&E to keep these to a minimum. The company should provide a detailed explanation and justification for these mothballing expenditures. LG&E should also include in the monthly reports any changes in circumstance that might affect the in-service date of Trimble County Unit No. 1. This information should include, but not be limited to, changes in load growth, new sales and purchases of generating capacity, changes in environmental regulations, as well as other unforeseen changes.

In addition, LG&E should provide a report to the Commission providing a detailed plan to accomplish a delay of at least 3 years at the Trimble County site. The report should be filed within 60 days from the issuance of this Order.

ORDERS

IT IS THEREFORE ORDERED that LG&E shall, based on the findings herein, delay the completion of Trimble County Unit No. 1 for at least 3 years beyond the currently planned 1988 in-service date, and shall provide within 60 days of the date of this Order a detailed action plan in response to the Commission's directive that the construction of Trimble County Unit No. 1 be delayed.

IT IS FURTHER ORDERED that LG&E shall continue to file monthly reports detailing the activity at the Trimble County site. The report shall include information concerning any changes in circumstance that might affect the in-service date in Trimble County Unit No. 1.

IT IS FURTHER ORDERED that LG&E and other parties are hereby placed on notice that in future rate cases the continuation of allowing a return on further additions to CWIP related to the Trimble County Unit No. 1 construction will be an issue.

IT IS FURTHER ORDERED that LG&E shall report in its next rate case on its efforts to implement the S&W forecasting methods and on its progress and plans to develop the necessary data.

Done at Frankfort, Kentucky, this 14th day of October, 1985.

PUBLIC SERVICE COMMISSION

Richard D. Heman Jr.
Chairman

Vice Chairman

Commissioner

ATTEST:

Secretary

## APPENDIX 1

Summary of Present Worth Revenue Requirements (Millions of Dollars) DATED October 14th 1985

| Expansion Plan | November Capacity Expansion Study Without Return On Unamortized Balance 1/ | Revised Capacity Expansion Study Without Return On Unamortized Balance 2/ | Revised Capacity Expansion Study With Return On Unamortized Balance 2/ |
|---|---|---|---|
| 1. Trimble County in 1988 | $3,341 | $3,600 | - |
| 2. Trimble County in 1993 | $3,360 | $3,644 | - |
| 3. All Combustion Turbines | $3,369 | $3,757 | $3,928 |
| 4. 25% Joint Ownership Sale | $3,240 | $3,502 | - |
| 5. 25% 10 Year Unit Power Sale | $3,240 | $3,501 | - |
| 6. 200 MW Joint Ownership Purchase | $3,482 | $3,807 | $3,978 |
| 7. 150 MW Unit Power Purchase | $3,335 | $3,723 | $3,894 |
| 8. Trimble County in 1988, EFOR = 15% 3/ | - | $3,491 | - |
| 9. All Combustion Turbines, EFOR = 15% 3/ | - | $3,567 | $3,738 |
| 10. Trimble County in 1988, EFOR = 15% | - | $3,281 | - |
| 11. All Combustion Turbines, EFOR = 15% | - | $3,218 | $3,389 |
| 12. Trimble County in 1988, oil/gas 3/ | - | $3,517 | - |
| 13. All Combustion Turbines, oil/gas 3/ | - | $3,502 | $3,673 |
| 14. Trimble County in 1988, oil/gas | - | $3,306 | - |
| 15. All Combustion Turbines, oil/gas | - | $3,190 | $3,361 |
| 16. 200 MW Seasonal Joint Ownership Purchase 3/ | - | $3,753 | $3,924 |
| 17. 200 MW Seasonal Joint Ownership Purchase | - | $3,404 | $3,575 |

1/ Capacity Expansion Study, Volume II - Technical Report, Exhibit 30.

2/ June 27, 1985, letter to Commission from Fred Wright.

3/ February, 1985, Forecasts by Stone and Webster used in analysis.