

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

AN INVESTIGATION OF THE	)	ADMINISTRATIVE
FUEL ADJUSTMENT CLAUSE	)	CASE NO. 309
REGULATION 807 KAR 5:056	)	

O R D E R

On September 3, 1986, the Public Service Commission instituted an investigation of the Fuel Adjustment Clause ("FAC") regulation (807 KAR 5:056). The purpose of the investigation was to determine whether, due to changed circumstances, the FAC should be modified or eliminated, and, if changes are needed, to develop a proposed regulation. In its Order, the Commission identified the following issues: (1) whether the Commission's objectives in establishing the standard FAC in 1978 have been met; (2) whether other objectives and standards should be adopted; (3) to review the FAC under current conditions; and (4) to determine specific alternatives and areas of concern. Comments were requested from electric utilities ("utilities") and interested parties. A public hearing was held on January 13, 1987. Motions to intervene in this proceeding were received from the Attorney General of the Commonwealth of Kentucky ("AG") and National Southwire Aluminum Company. Both Motions were granted. Each utility that filed comments is deemed to be a party to this proceeding.

Comments were received from Berea College Electric, Kentucky Power Company ("Kentucky Power"), Kentucky Utilities Company

("Kentucky Utilities"), Louisville Gas and Electric ("LG&E"), Union Light, Heat and Power ("ULH&P"), Big Rivers Electric Corporation ("BREC"), Big Sandy Rural Electric Cooperative Corporation, Blue Grass Rural Electric Cooperative Corporation, Clark Rural Electric Cooperative Corporation, Cumberland Valley Rural Electric Cooperative Corporation, East Kentucky Power Cooperative ("East Kentucky Power"), Farmers Rural Electric Cooperative Corporation, Fleming-Mason Rural Electric Cooperative Corporation, Fox Creek Rural Electric Cooperative Corporation, Grayson Rural Electric Cooperative Corporation, Green River Electric Corporation, Harrison County Rural Electric Cooperative Corporation, Henderson-Union Rural Electric Cooperative Corporation, Inter-County Rural Electric Cooperative Corporation, Jackson County Rural Electric Cooperative Corporation, Jackson Purchase Electric Cooperative Corporation, Licking Valley Rural Electric Cooperative Corporation, Nolin Rural Electric Cooperative Corporation, Owen County Rural Electric Cooperative Corporation, Salt River Rural Electric Cooperative Corporation, Shelby Rural Electric Cooperative Corporation, South Kentucky Rural Electric Cooperative Corporation, Taylor County Rural Electric Cooperative Corporation, and the AG.

1978 OBJECTIVES FOR THE STANDARD FAC

The standardized FAC established in 1978 was intended to meet the major objectives of the Commission's review in Case No. 6877, The Examination of the Fuel Adjustment Tariff Provisions of Kentucky Power Company, East Kentucky Power Cooperative, Louisville Gas and Electric Company, Kentucky Utilities Company,

Big Rivers Electric Corporation, Union Light, Heat and Power Company. Those objectives were: (1) to bring fuel charges under appropriate Commission regulatory processes; (2) to standardize the FAC for all jurisdictional electric utilities; (3) to insert fuel charges into base rates on a systematic basis; (4) to introduce incentives for management to hold down fuel costs; and (5) to represent a responsible, workable regulatory procedure for handling fuel clause matters in Kentucky.

The AG raised concerns regarding whether these objectives have been met. The AG's witness, Mr. Neil Talbot of Energy Systems Research Group ("ESRG"), suggested that over the last several years the FAC procedure in Kentucky had not been characterized by significant scrutiny of fuel costs.<sup>1</sup> This conclusion was based on the shortness of the FAC hearings, the absence therein of active intervenors,<sup>2</sup> and the observation that a much higher percentage of requested fuel cost was allowed in FAC cases than the percentage of requested rate increases allowed in general rate cases.<sup>3</sup> The AG has intervened in all FAC cases and sponsored testimony in some of these cases. Substantial fuel cost data is filed monthly with the Commission and is reviewed in detail. This routine review and the frequency of the FAC hearings lessens the need for lengthy hearings. Mr. Talbot had no specific suggestions for additional information to be filed or

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1 AG's Comments, page 45.

2 AG's Comments, page 46.

3 Transcript of Evidence ("T.E."), pages 168, 181.

procedures for review regarding scrutiny of fuel costs and said he was not fully aware of the extent of information currently filed under the existing FAC. In its post-hearing comments, the AG expressed his concern for Commission resources, saying the level of resources devoted to fuel issues could usefully be increased.<sup>4</sup> The generating utilities' (Kentucky Power, Kentucky Utilities, LG&E, BREC, and East Kentucky Power) comments were supportive of the extent of current oversight but suggested more audits by Commission Staff. The Commission Staff began a program of systematic FAC audits in 1986.

Another concern raised by the AG was the lack of incentives for utility management to hold down fuel costs. Mr. Talbot said that current incentives appeared generally reasonable as far as they went, but stronger incentives were needed.<sup>5</sup> The 1978 regulation introduced incentives through oversight, recovery lags, and limitations on recovery of forced outage costs, energy purchases expense and fuel related expenses. The Commission is of the opinion that although stronger incentives might be appropriate today, the 1978 objectives were generally met. The need for stronger incentives will be addressed in another part of this Order.

#### NEW OBJECTIVES AND STANDARDS

The September 3, 1986 Order discussed a new list of objectives for the FAC and standards for evaluating the continued

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<sup>4</sup> AG's Additional Comments, page 3.

<sup>5</sup> AG's Comments, page 45.

need for a FAC. The new objectives for a regulatory framework for recovery of fuel expenses were to: (1) provide incentives for efficient management of fuel costs; (2) provide information that permits the Commission to adequately monitor fuel costs to protect ratepayers; (3) be consistent for all jurisdictional utilities; (4) be fair in billing costs to the cost-causer; (5) be administratively workable and efficient; and (6) provide for fair regulation of both distribution and generation utilities. The primary purpose of including a FAC in the regulatory framework is to provide a means of quickly adjusting utilities' rates in times of rapid changes in the price of fuel. Therefore, the decision to include a FAC depends in part on the extent of control or influence utilities have over fuel costs, the percentage of fuel costs to total utility operating costs and the variability of fuel prices.

A concern expressed by the utilities about this set of objectives was the need for incentives in the FAC to encourage efficient management of fuel expenses. LG&E, which emphasized this concern more than other parties, stated that the FAC was important for providing a rational method of passing changes in fuel expenses on to its customers and that it was aware that keeping fuel expenses as low as practicable was a basic prerequisite for the privilege of having a FAC. Other incentives for LG&E to keep its fuel costs low were pride in its low electric rates, competition among utilities to attract economic development to their service areas, maintaining and improving customer

satisfaction, regulatory scrutiny, and employees' individual performance incentives. LG&E concluded that a well-managed utility should give as much attention to fuel procurement with or without a fuel clause. LG&E views the FAC as a means of efficiently dealing with variations in a very large expense item.<sup>6</sup>

Mr. Talbot argued that the major substantive concern associated with the use of FACs is the absence of any strong incentive to minimize fuel costs.<sup>7</sup> Since 1978, the Commission has held that one of the objectives of a FAC is to provide incentives for utilities to hold down fuel costs. In considering modification or elimination of the FAC, the Commission has decided to base its consideration on the stated objectives and standards in its September 3, 1986 Order.

#### THE APPROPRIATENESS OF A FAC UNDER CURRENT CONDITIONS

In deciding whether a FAC should be included in Kentucky's regulatory framework today, the objectives in the preceding section and the criteria in this section have been considered under current conditions.

The first criteria is the extent of control or influence utilities have over fuel costs. All jurisdictional distribution electric utilities purchase 100 percent of their requirements from generators at rates set by this Commission or the Federal Energy

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<sup>6</sup> LG&E Comments, pages 2-3.

<sup>7</sup> AG's Comments, page 44.

Regulatory Commission. Beyond intervention in supplier rate cases and managing line loss, distributors have little control over fuel costs. Generators have significant influence over fuel costs through fuel purchasing practices, fuels handling, and power plant operations. However, the level of coal-market prices is clearly beyond utility control.

The second criteria is the ratio of fuel costs to total costs. Energy System Resource Group, Inc.'s ("ESRG"), report showed ratios of operating costs in Kentucky ranging from approximately 70 percent fuel and 30 percent non-fuel for Kentucky Power to approximately 45 percent fuel and 55 percent non-fuel for LG&E.<sup>8</sup> Fuel cost is the single, largest expense for Kentucky electric utilities.

The third criteria is the variability of fuel expenses. Comments were requested regarding changes in the variability of fuel expenses over the past 10 years. The AG recognizes that coal costs are a dominant component of fuel expenses and reports that from 1979 through 1985 there have been no significant fluctuations (i.e., movement up or down) in fuel prices on an annual basis. The AG states that from 1979 through 1982 fuel prices moved steadily upward and from 1982 through 1985 fuel prices remained relatively flat.

Data provided by Kentucky Power showed a compounded rate of increase of 7.73 percent in cents per million BTU from August 1976 to August 1986, with a 10-year range from a 20.5 percent increase

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<sup>8</sup> AG's Comments, page 30.

(1976-77) to a 14.29 percent decrease (1982-83). Kentucky Utilities showed fuel costs in dollars per ton which varied by as much as 25 percent from 1977 to 1986 and had a compounded rate of increase of 4.48 percent over this period. BREC provided supporting data on its cost of fuel in cents per million BTU from 1976 to 1985. The average compounded rate of increase for BREC for this period was 10.47 percent with a range from a 31.5 percent increase (1976-77) to a 3.4 percent decrease (1982-83). LG&E reported a compounded average fuel cost increase in dollars per ton from August 1976 to August 1986 of 7.95 percent, ranging from a 21.9 percent increase (1977-78) to a 2.3 percent decrease (1982-83). East Kentucky Power reported its coal costs increased by 104 percent from 1976 to 1983 with a range from a 24 percent increase in 1977 to a 5 percent decrease in 1979. Since April 1983, East Kentucky Power's prices have fallen by 32 percent which, for the 10-year period, results in a 3.1 percent compounded rate of change. Overall, prices increased until 1983 and decreased after that. The average compounded rate of change over the 10-year period was about 6.75 percent.

Comments were requested regarding forecasts of changes in the variability and level of fuel expenses over the next 5 years. The AG projections indicate coal prices should fall slightly (2 percent) or increase at a moderate pace (3-6 percent) and given the current overproduction in the fuel market, fuel expenses should not vary any more than non-fuel operating costs over the next 3 to 5 years. Therefore, in the AG's opinion, volatility is



no longer a reason for treating fuel expense any differently than other operating expenses.

Each of the generating utilities recognized several factors affecting the future variability of fuel costs. These factors included: the supply and demand imbalances for coal; the cost of mining and transportation; wages resulting from a new labor contract in February 1988; uncertainties regarding OPEC; inflation, and the domestic economy; and the generation mix of long-term coal contract and short-term spot prices. Kentucky Power expects coal expenses to increase at a compounded rate of 3.9 percent over the next 5 years with a range of 3.1 percent to 4.6 percent. Kentucky Utilities did not give any specific forecasts other than stating it uses a research consultant's forecasts for internal budget forecasts of fuel costs. BREC agrees that current fuel costs have stabilized, but feels there is no assurance this will continue in the coming years because of the aforementioned factors affecting fuel prices. Therefore, BREC is of the opinion that variability over the next 5 years is impossible to predict with any confidence. LG&E also does not expect any major changes in coal costs over the next 5 years although it expects some variability. East Kentucky Power assumed inflation of 6 percent in 1988 and 7 percent for 1989 and 1990 in making its projections that fuel costs will increase at a 4.3 percent compounded rate over the next 5 years. Although it is impossible to predict with any confidence, most of the parties project coal prices to increase at a moderate rate to 3 to 6 percent over the next 5 years.

Another criteria is the potential effect of a FAC on efficient pricing. The AG is of the opinion that elimination of the FAC would improve pricing efficiency. The AG argues that because monthly fuel adjustments are so small in relation to the overall bill it would not be rational for consumers to adjust their behavior significantly in response to such short-term changes. Therefore, the AG contends it would be more appropriate to send price signals of a more permanent nature through periodic price changes as determined through general rate cases.

The opinions of all the generators were relatively the same, that elimination of the FAC would make it difficult to properly assign costs to the cost-causer. At present, there are continued minor changes in costs charged to consumers and with the current FAC these charges are properly assigned to the cost-causers. If the FAC is eliminated, then there would be abrupt changes in costs to consumers resulting in longer time lags and causing less equitable charges of cost to the cost-causer.

In addition to continuing the FAC, the generators also proposed changes to eliminate the time lag. Kentucky Utilities proposed method to reduce the time lag was to use estimated numbers for one month, which would be corrected the following month by use of a rolling reconciliation as an over/under-recovery mechanism to the FAC. This could provide a better means of reflecting current fuel prices and thus sending proper price signals to consumers.

The Commission agrees that more frequent rate adjustments tend to provide more efficient pricing. However, with monthly

adjustments, the use of estimated data will not materially improve price signals but will materially increase regulatory costs.

Based on its review of the appropriateness of a FAC under current conditions, the Commission is of the opinion and hereby finds that:

1. The distributors' lack of control over fuel, which is a large and potentially variable cost item, justifies retaining a FAC for them.

2. The generators' less than complete control over a large and potentially variable cost item supports the need for some expedited procedure -- even if less expedited than the current FAC.

3. Fuel costs are a utility's largest single cost, comprising 40 to 50 percent of total costs. The significant magnitude of fuel costs necessitates the continuation of systematic information filings and semi-annual hearings for regulatory oversight as in the current FAC as administered.

#### SPECIFIC ALTERNATIVES TO EXISTING FAC

##### ESRG's Proposal to Eliminate FAC With a Threshold Mechanism as Backup

When this case was initiated, one alternative to be considered was eliminating the current FAC and replacing it with a standby clause available for use during periods of rapid fuel price changes. All of the generators strongly opposed a standby clause. East Kentucky Power raised the concern that a standby clause could lead to problems similar to those that existed prior to implementation of the current clause when much of the public

was shocked with their FAC experience. Kentucky Utilities also discussed the likelihood of confusion and criticism when FAC billing would be triggered. LG&E referred to the 1975 Ernst and Ernst review of FACs for the Governor's Special Advisory Commission on Electric Utility Rates and Regulations. Ernst and Ernst's report concluded that having a FAC during rising prices and terminating it when prices stabilized would be unfavorable to consumers. The AG and its consultant, ESRG, said that with elimination of the FAC a contingency mechanism would be needed and suggested ESRG's threshold mechanism.

ESRG's primary recommendation is to abolish the FAC and deal with fuel costs in general rate cases. Under ESRG's proposal, a volatility threshold of six percent of total fuel costs on a quarterly basis and three percent on an annual basis would provide a safety valve against the effects of rapid changes in fuel costs. A special rate hearing focused specifically on fuel costs could be initiated any time cost changes exceeded the threshold limits. This proposal was based partially on the method used in Wisconsin where rates are set on a forecasted basis annually. If fuel costs vary from base costs by more than 10 percent in a month or six percent in a quarter, a review is triggered. If the review demonstrates that annual costs will fall outside a three percent range around the forecast, rates are changed during the year.

One concern raised in this proceeding was the number of cases that would be triggered by the threshold mechanism. At the

hearing, each generator was asked to prepare an analysis of the effect that ESRG's volatility threshold would have had with respect to triggering special fuel rate hearings since the end of 1978. Mr. Talbot stated that the threshold should be calculated on a cents per KWH basis rather than a cents per MMBTU basis<sup>9</sup> and that discrete calendar quarters and rolling four-quarter periods be used.<sup>10</sup> Kentucky Power, using Mr. Talbot's method except for using annual calendar periods and assuming a 3-month lag in changing the base, calculated that 11 cases would have been triggered and that this method would have resulted in \$11,829,604 of unrecovered fuel cost without any adjustment or review of fuels from the last quarter of 1983 until the first quarter of 1986.

East Kentucky Power, using an approach similar to Kentucky Power's method also calculated 11 special rate hearings.

LG&E used rolling quarters, which tripled the opportunities for triggering hearings, and compared the current 3-month average fuel cost to the immediate prior 3-month average fuel cost rather than to the existing base costs. As a result, LG&E calculated 56 special rate cases. A review of LG&E's data indicates that using discrete quarters and comparisons to base costs would have produced approximately 10 special rate hearings.

Kentucky Utilities used rolling quarters and cents per MMBTU and tracked quarterly and annual triggers separately. The result

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<sup>9</sup> T.E., page 143.

<sup>10</sup> T.E., pages 144 and 171.

was 17 hearings from the quarterly method and 14 from the annual method. Using discrete quarters would have produced approximately 18 rate hearings. For all utilities, frequently an increase in one quarter was followed by a decrease in the next quarter.

Mr. Talbot did not estimate the number of rate filings that would be triggered by use of the threshold approach. He said that fewer cases are likely to be triggered than are indicated by this historical data due to (1) reduced fuel price volatility since 1982, (2) adjustments to fuel costs that would be made in general rate cases, (3) adjustments in cases for known and measurable changes, and (4) combining cases when triggers occur in successive periods.<sup>11</sup>

A second concern about the threshold mechanism was the potential effect on utilities' financial stability. Mr. Talbot did not estimate the financial impact of the threshold approach but said that a one percentage point change in the earned return on common equity would not be so significant as to jeopardize the financial performance of a company.<sup>12</sup> Kentucky Power calculated that a four percent change in fuel cost would result in a one percent change in return on equity.<sup>13</sup> A four percent fuel price

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<sup>11</sup> AG's Additional Comments, page 4.

<sup>12</sup> T.E., page 164.

<sup>13</sup> Comment, page 3.

change would not trigger a rate hearing for a full year under the ESRG proposal.

Kentucky Utilities said that eliminating the FAC would encourage more long-term contracts<sup>14</sup> and Kentucky Power said it would encourage long-term coal commitments, more use of western coal with stable prices and wider tonnage nomination bands. These actions would stabilize fuel prices, but at higher levels than currently incurred. These higher levels would be built into base rates.<sup>15</sup> The AG finds this argument fallacious as it ignores the potential benefit to utilities of reducing fuel costs when they would be able to keep part of the savings and ignores the role of regulatory oversight in reviewing contracts.<sup>16</sup>

As previously stated, the ESRG report recommends elimination of the FAC and returning fuel and purchased power costs to consideration in general rate proceedings. In this context, predictable changes in fuel prices would be addressed through adjustments for those known and measurable changes to historical test-year data.

In response to the Commission's request for comments, ULH&P noted that one of the practical problems with elimination of the FAC is the Commission's unwillingness to use projected test periods. ULH&P maintained that, if the FAC were eliminated, basing on-going expenses on historical data would be unreasonable.

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<sup>14</sup> Comment, page 3.

<sup>15</sup> Comments, pages 22-23.

<sup>16</sup> Additional Comments, page 6.

ULH&P contends that if a utility is to be allowed an opportunity to earn its authorized rate of return, the level of fuel expense should reflect future sales, generation mix, fuel mix, contract prices, and market conditions.

When questioned at the public hearing regarding the use of projections or a prospective test year, Mr. Talbot stated that, to the extent that fuel costs are partly volatile and not predictable, a degree of uncertainty exists that suggests using a historical rather than a fully forecasted test period. Mr. Talbot maintained that using a historical test period adjusted for known and measurable changes would be better than going to a forecasted test year with all the problems inherent in forecasting.

The Commission is concerned about the uncertainty presented by the threshold method. It does not provide for regular scheduled fuel cost reviews and hearings and it requires retention or absorption by the utility of 100 percent of fuel cost deviations within the threshold range. Therefore, in periods of stable prices, utilities could go too long between reviews. In periods of rapid inflation, with the use of historical test periods, utilities could have financial problems. In periods of declining coal prices, utilities could reap a windfall gain.

Determining the amount of fuel cost to be allowed in base rates would become a controversial rate case issue. The use of forecasted test years or even substantial adjustments to historical test years would require in-depth analysis of sales levels, generation mix, outage rates, heat rates, fuel mix,



contract prices, escalator clauses, and spot-market prices. For each of these items the Commission would have to determine a reasonable level. The hearing process would include extensive arguments on these engineering and coal procurement issues. In periods of rapid inflation, with all generators filing concurrently, Commission and Staff resources would be strained.

Modifying ESRG's proposal to use a wider threshold range would increase the likelihood of infrequent review and financial risks. Modifying the proposal to use a narrower threshold range would increase the frequency of filings and related administrative costs.

Compared to the current FAC, this proposal shifts much of the risk of short-term changes in coal spot-market prices and power plant efficiency from ratepayers to the generating utility. Because the utilities can choose when to file rate cases, the threshold method shifts little of the risks of coal contracting errors or long-range adjustments in coal market prices and power plant efficiencies. In considering a change to this threshold method, the trade-off is the creation of increased uncertainty about financial and administrative consequences in return for increased short-run incentives for efficient management of spot-market and short-term contract purchases and power plant performance. In addition, there appears to be no additional long-run incentives for efficient management of coal procurement and power plant performance. For these reasons, the Commission will not adopt the threshold method as a means of incorporating financial incentives into fuel cost regulation.

## Proposals to Modify FAC

Other specific alternatives to the existing FAC proposed in this proceeding include ESRG's alternate proposal of a partial passthrough of fuel cost changes and proposals to modify the FAC by redefining forced outages, including power plant performance measures, using forecasted data to reduce lag, including an over/under recovery mechanism, require more information on fuels planning, search, selection and negotiation, monitoring economic dispatch, and adopting ULH&P's Fuel Cost Recovery ("FCR") method. The following sections include the Commission's discussion of these proposals.

### 1. Partial Passthrough

If the Commission decides to retain a fuel clause, ESRG recommends modifying it to include an incentive feature. Under ESRG's procedure fuel cost would be set annually at a base level. Deviations of 50 percent to 75 percent from this level would be subsequently billed and trued-up in a deferred account. The remaining 25 percent to 50 percent would be absorbed or retained by the utility.

In this alternative recommendation, ESRG again advocated the use of historical data adjusted for known and measurable changes. There would be an annual hearing in which the past year's targets and actual costs are partially reconciled and a new fuel rate is set.

Kentucky Power stated in its response to the Commission's request for comments that a partial passthrough of differences between actual fuel costs and costs included in base

rates would deprive a utility of the right to recover prudently incurred costs. Thus, the utility would be penalized and this procedure could be considered confiscatory.

The Commission finds no merit in Kentucky Power's argument. Absent a FAC, all fuel costs are recovered through base rates. Should fuel costs change from the level included in base rates, the utility is at risk until it can receive Commission approval of a change in base rates under KRS 278.180 and 278.190. In an effort to shift this short-term risk of over- or under-recovery of fuel costs from the utility to the ratepayers, the Commission has permitted utilities to voluntarily choose to utilize a FAC. In electing to adopt a FAC, a utility is not only able to recover increased fuel costs more timely than by changing its base rates, it must also flow back reduced fuel costs in this timely manner. The Commission sets base rates to allow a utility the opportunity to earn a fair and reasonable return. This regulatory principal is true irrespective of whether a FAC is permitted or not, or whether a FAC allows full cost passthrough or partial cost passthrough. If the Commission by regulation authorizes a FAC that allows only partial cost passthrough, the election by a utility to utilize such a FAC is made with the knowledge and understanding of that limitation. Any utility that is unwilling to bear the risk inherent in a partial passthrough FAC can recover its total fuel costs in the same manner that it recovers all other prudent costs -- through its base rates.

The partial passthrough method presents similar trade-offs to the threshold method. Adoption would increase administrative costs, primarily in the analysis and hearing of test-year adjustments to sales levels, generation mix, outage rates, heat rates, fuel mix, contract prices, escalator clauses, and spot market prices. Using unadjusted historic test years would reduce administrative costs and mitigate the need for detailed power plant performance standards. However, without test year adjustments, the likelihood of significant differences between expected fuel costs and fuel costs embedded in base rates could increase.

The partial recovery method would also increase financial uncertainty for generating utilities by shifting some risk of short-term changes in coal spot-market prices and power plant efficiency from ratepayers to generating utilities. However, the risk shifting would provide additional short-run incentives for efficient management of spot-market purchases and power plant performances. Depending on the percentage passthrough allowed, the increased risks and incentives may be much smaller than for the threshold method. Furthermore, because the partial recovery method provides for the routine scheduling of hearings and the retention of much of the current FAC framework, there is less administrative uncertainty involved than with the threshold method.

The Commission wants to include additional financial incentives in the FAC, and, because it presents less financial and administrative uncertainties, prefers the partial passthrough

method to ESRG's threshold method for generating utilities. The percentage of passthrough selected depends upon the amount of financial incentive desired and the size of potential windfalls or shortfalls found acceptable. Although no party proposed a limit or cap on fuel cost deviations absorbed or retained by utilities, this is another method of limiting risk. The Commission is of the opinion that a partial passthrough provision should be added to the FAC. In balancing the benefits of additional financial incentive with greater administrative costs and uncertainties, the Commission has decided that the percentage of passthrough should be set at 90 percent of deviations from base fuel cost. Further protection against large gains or losses from extreme fluctuations in fuel costs should be provided by a cap of 3 percent of total fuel costs on fuel cost deviations absorbed or retained by utilities in each 6-month review period.

This partial passthrough method can be incorporated in the current FAC for generators by retaining biennial roll-ins of fuel costs into base rates and changing the formula for the monthly fuel charges ( $r_m$ ) from  $r_m = \frac{F_m}{S_m} - \frac{F_b}{S_b}$  where

$F_m$  is the allowable fuel cost in the current month,  
 $F_b$  is the allowable fuel cost in the base period,  
 $S_m$  is the KWH sales in the current month, and  
 $S_b$  is the KWH sales in the base period;

to  $r_m = A_m/S_m$  where  $A_m = p (F_m - \frac{F_b}{S_b} S_m)$

and  $p$  is the percentage allowed to passthrough the fuel clause. The Commission is of the opinion that using historic test years with known and measurable adjustments in the biennial roll-ins is

consistent with rate-case treatment and best serves the interests of all parties.

The AG did not propose applying the partial passthrough to distribution utilities. Distribution utilities with full requirements contracts for purchased power have minimal control over fuel costs in the short-run. Therefore, the Commission will not change the current FAC as applied to distribution utilities.

## 2. Forced Outages

Most generators opposed the current fuel clause provision on forced outages.

The limitations on recovery of fuel expense due to forced outages is not a consideration to BREC since the minimizing of forced outages and restoring capacity to serve the load is its primary goal. BREC said that the inclusion of the forced outage provision in the FAC is not an incentive to hold down fuel costs and, therefore, should be removed.

LG&E did not make a specific recommendation on changing the regulation on fuel recovery costs due to forced outages; however, it would prefer a change in the regulation which would not restrict a flow through of fuel costs that is caused by a forced outage.

East Kentucky Power said that forced outages are undesirable under any circumstances and the incentive included in the FAC compliments its goal of keeping forced outages to a minimum. East Kentucky Power did not recommend a change.

Kentucky Power said the limitation on recovery of fuel expense due to forced outages should be revised since this

provision in the regulation does not recognize nor encourage the effects of centrally dispatched "power pooling" and thereby penalizes Kentucky Power which is part of the American Electric Power System. Fuel costs differ significantly between Kentucky Power's Big Sandy plant and the power pool that provides substitute power in the event of an outage.

Kentucky Utilities said that the limitation on recovery due to forced outages does not consider other factors which impact the customer charge per KWH, such as the decision to build scrubbers or to burn EPA compliance coal. Because of Kentucky Utilities's compliance coal contracts, there is a large difference in fuel costs between units. Therefore, the forced outage limitation results in significant disallowances for Kentucky Utilities although its customers benefit from the avoidance of scrubber investment costs. Consequently, Kentucky Utilities proposed to revise the FAC to allow recovery of fuel costs when it has been shown that a forced outage is not a result of faulty equipment, faulty manufacture, faulty design, faulty installation, faulty operation, or faulty maintenance.

The Commission ruled against this same objection in 1978, choosing to keep the risk of forced outages on the utilities. The generating facilities are under the utilities' control; therefore, the utilities should bear the risk of losses from forced outages. The utilities have presented no new arguments in this case and the Commission is of the opinion that the forced outage provision should remain unchanged.

### 3. Power Plant Performance

The AG said that including various performance standards, such as fixed heat rates, power plant availability and/or capacity factors into the FAC or base rates would be desirable.

BREC said that performance standards based upon heat rates have certain disadvantages such as difficulty in accurately determining the weighted average of BTU/LB of coal burned per KWH of generation whereas the cost of coal for the KWH of generation may be easily determined. Furthermore, the determination of the heat rate for purchased power from multiple sources would present problems. The use of power plant availability incentives could have the effect of causing utilities to forego or delay maintenance on generating units thereby resulting ultimately in higher costs to the ratepayers.

LG&E asserts that providing incentives to promote the efficient management of fuels is not the major purpose of the FAC; however, it does believe that there are sufficient incentives already in place such as: (a) competition among utilities to attract new economic development to their service areas; and (b) maintaining and improving customer satisfaction. Achieving these goals of keeping rates low and competitive requires efficient management of fuel procurements, generating unit availability, low heat rates, and economic dispatch of generating units.

Kentucky Utilities said that monitoring power plant performance such as heat rates and plant availability requires knowledge of power plant operations and maintenance. The Commission would need to create a redundant staff to the utilities



staff and the utilities may be required to increase its staff to supply the associated information which would be required. Monitoring of economic dispatch practices would require a significant amount of time and it is doubtful that any benefits could be obtained since so many diverse decisions associated with the economic dispatch of units are not expressly dependent upon fuel costs.

Kentucky Power stated that it was constantly monitoring power plant maintenance, heat rate efficiency, plant availability and other operating characteristics and elimination of the fuel clause would not affect this present practice. The use of a fixed heat rate and power plant availability are important measures of performance; however, the fuel clause mechanism is not the appropriate place to determine if a company should be rewarded or penalized.

East Kentucky Power recommends that the FAC regulations be modified to require a more stringent monitoring of each generating utility which would include power plant performance and availability, heat rate efficiency, and economic dispatch practices; however the use of a fixed heat rate would distort costs because they do not track actual power plant performance since the plant performance is both load and season sensitive.

The Commission is concerned that detailed power plant performance standards may present more implementation problems than benefits. One problem is the difficulty in setting reasonable standards for each unit for a range of future operating conditions. A more serious problem is that incentives based on

power plant performance standards reward reductions in individual cost element covered by those standards rather than rewarding reductions in total generating costs. The partial passthrough method should be a more efficient way of providing additional incentives for improved power plant performance.

#### 4. Recovery Lags

The requirement that the monthly fuel adjustment be calculated using actual costs and filed with the Commission 10 days in advance of billing creates a 1-month lag in recovering fuel costs increases and in passing through fuel cost decreases. The use of forecasted data is one method of reducing recovery lags in the current FAC. The generators did not consider the existing recovery lags as an effective incentive nor did they make a strong proposal for using forecasted data. Kentucky Power proposed using forecasted data. Kentucky Utilities discussed the Virginia method of using forecasted data and suggested recognizing forecasted fuel levels in base rates. LG&E discussed its prior use of forecasted data but made no proposal as to using forecasted data. None of the other utilities made any proposal to use forecasted data. The Commission specifically excluded the use of forecasted data in 1978. Since allowed fuel costs are periodically rolled into base rates, the recovery lag applies only to interim increases and decreases. The lag is unlikely to have a material impact on

utilities' financial positions. Use of forecasted data would require reconciliation with actual costs, adding calculations to be reviewed in each monthly filing. The 10-day period between filing and billing does not allow for extensive review of forecasts and reconciliations.

The Commission again rejects the use of forecasted data in monthly filings as it has little benefit and would hinder the Commission's review of charges prior to billing.

5. Over/Under Recovery

All the generators, with the exception of East Kentucky Power, proposed the inclusion of a provision for billing over/under-recoveries of fuel expense. Kentucky Utilities stated that the recovery mechanism should apply only to the FAC. LG&E discussed its recent poll and the results showing the favorable acceptance of the FAC by the public. The opinion of LG&E was that the inclusion of an over/under-recovery would strengthen the public's acceptance of the FAC. The billing of over/under-recoveries of FAC charges and credits is currently done for distributors.

An over/under-recovery provision for FAC charges should be extended to generators. It should eliminate one concern regarding fuel synchronization adjustments in rate cases and serves public interest as it avoids over-recoveries. Incorporating an over/under-recovery mechanism into the partial passthrough proposal developed earlier in this Order would change the formula

for the monthly fuel charge to

$$r_m = A_m/S_m \text{ where } A_m = p (F_m - \frac{Pb}{Sb} S_m) + U_m,$$

$$U_m = A_{m-2} - R_m, \text{ and}$$

$$R_m = \text{Fuel clause revenue in the current month.}$$

#### 6. Information Required

ESRG suggested that the Commission require that fuel procurement and systems operations data be filed in a standard format on a regular basis, at least annually, with summary data quarterly.<sup>17</sup> Reports should include cost data as accounted for by the Uniform System of Accounts, recovery data through billings associated directly with the passthrough, and quantification of the over-recovery or under-recovery position of the utility for the reporting period and year to date. Operating data should include key indicators such as generating unit heat rates, generation mix, fuel mix and plant availability load and utilization factors. ESRG summarized Colorado's fuel clause review system as an example of a good review system.<sup>18</sup> Kentucky's clause has always required more information than that listed above or included in ESRG's summary of Colorado's system. Mr. Talbot had not analyzed the extent of information available under the current FAC.<sup>19</sup>

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<sup>17</sup> AG's Comments, page 48.

<sup>18</sup> AG's Comments, page 28.

<sup>19</sup> T.E., pages 222-223.

The generators agreed that the current FAC provided adequate information. The Commission plans no change in information requirements in the FAC regulation.

#### 7. FCR Method

ULH&P requested that the Commission consider the FAC method it had proposed in Case No. 9175-B, An Examination by the Public Service Commission of the Application of the Fuel Adjustment Clause of Union Light, Heat and Power Company from May 1, 1985, to October 31, 1986. This method, based on Ohio regulation, uses 6 months of actual or projected fuel expense to develop an FCR rate. The FCR remains unchanged for 6 months and is billed separately from the base rate. Total, actual fuel expenses are reconciled with revenues generated by the FCR and over-recoveries and under-recoveries are subsequently billed.

The current Kentucky FAC places all ongoing fuel expenses in base rates every 2 years. For distribution utilities, such as ULH&P, this is normally the fuel cost in the wholesale base rate adjusted for line loss. Any actual deviations from the base fuel cost are billed through the monthly fuel clause. For distribution utilities, over- and under-recoveries of deviations included in the fuel clause are also billed through the monthly fuel charge. The Commission rejects the FCR proposal as it is well satisfied with the current distributor FAC, which, unlike the FCR, bills most fuel costs through base rates and provides for monthly FAC adjustments. The FCR's semi-annual adjustments would not be consistent with monthly wholesale FAC adjustments to distributors like ULH&P nor with this Commission's objective of providing a

means of quickly adjusting rates in times of rapid fuel price changes.

Proposals for Additional Audits

East Kentucky Power and Kentucky Utilities recommended additional spot or regular audits of the FAC. The existing program of management audits was favorably discussed by the generators. Mr. Talbot also supported management audits. The Commission Staff renewed an active program of financial field audits of the FAC in 1986. No change in the FAC regulation is necessary regarding audits.

SUMMARY OF FINDINGS

The Commission, having considered the evidence of record and being advised, finds that:

(1) The Commission's objectives in establishing the standard FAC in 1978 have been met.

(2) The Commission's objectives and standards for the standard FAC are as stated in the Commission's September 3, 1986 Order and in this Order.

(3) A FAC is an appropriate part of the regulatory framework under current conditions.

(4) The FAC regulation should be revised to incorporate a partial passthrough incentive and to allow for billing of FAC over- and under-recoveries.

(5) All other proposed modifications of the FAC regulation should be denied.

(6) The draft regulation in Appendix A incorporates the approved revisions to the FAC regulation.

(7) Any interested party may submit written comments regarding the findings in this Order and the draft regulation on or before October 21, 1988.

ORDER

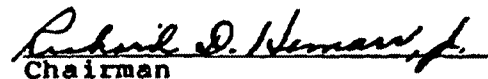
IT IS THEREFORE ORDERED that:

(1) Each utility that filed comments be and it hereby is deemed to be a party to this proceeding.

(2) The draft regulation in Appendix A be and it hereby is submitted for comments.

Done at Frankfort, Kentucky, this 21st day of September, 1988.

PUBLIC SERVICE COMMISSION

  
Chairman

  
Vice Chairman

  
Commissioner

ATTEST:

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Executive Director

APPENDIX A

807 KAR 5:056. Fuel adjustment clause.

RELATES TO: KRS Chapter 278

PURSUANT TO: KRS 278.030(1)

NECESSITY AND FUNCTION: KRS 278.030(1) provides that all rates received by an electric utility subject to the jurisdiction of the Public Service Commission shall be fair, just and reasonable. This regulation prescribes the requirements with respect to the implementation of automatic fuel adjustment clauses by which electric utilities may immediately recover changes in fuel costs subject to later scrutiny by the Public Service Commission.

Section 1. Fuel Adjustment Clause. Fuel adjustment clauses which are not in conformity with the principles set out below are not in the public interest and may result in suspension of those parts of such rate schedules:

(1) The fuel clause shall provide for periodic adjustment per KWH of sales equal to the difference between the fuel costs per KWH sale in the base period and in the current period according to the following formula:

$$\text{Adjustment Factor} = \frac{A(m)}{S(m)}$$

where  $A(m) = .9 \left( F(m) - \frac{F(b)}{S(b)} S(m) \right) + U(m)$ : U is the under (over)

recovery of allowed fuel expense carried forward from the most recently billed fuel charge; F is the expense of fossil fuel in the base (b) and current (m) periods; and S is sales in the base (b) and current (m) periods, all as defined below. For electric utilities with no generating capacity that purchase all energy needs under a full requirements contract at regulated wholesale rates, A(m) shall equal the fuel adjustment charge or credit in the most recent wholesale power bill plus U(m).

(2) F(b)/S(b) shall be so determined that on the effective date of the Commission's approval of the utility's application of the formula, the projected resultant adjustment will be equal to zero (0). For electric utilities with no generating capacity that purchase all energy needs under a full requirements contract at regulated wholesale rates, the fuel cost included in retail base rates shall reflect the fuel cost in wholesale base rates.

(3) Fuel costs (F) shall be the most recent actual monthly cost of:

(a) Fossil fuel consumed in the utility's own plants, and the utility's share of fossil and nuclear fuel consumed in jointly owned or leased plants, plus the cost of fuel which would have been used in plants suffering forced generation or transmission outages, but less the cost of fuel related to substitute generation; plus



(b) The actual identifiable fossil and nuclear fuel costs associated with energy purchased for reasons other than identified in paragraph (c) below, but excluding the cost of fuel related to purchases to substitute for the forced outages; plus

(c) The net energy cost of energy purchases, exclusive of capacity or demand charges (irrespective of the designation assigned to such transaction) when such energy is purchased on an economic dispatch basis. Included therein may be such costs as the charges for economy energy purchases and the charges as a result of schedule outage, all such kinds of energy being purchased by the buyer to substitute for its own higher cost energy; and less

(d) The cost of fossil fuel recovered through inter-system sales including the fuel costs related to economy energy sales and other energy sold on an economic dispatch basis.

(e) All fuel costs shall be based on weighted average inventory costing.

(4) Forced outages are all nonscheduled losses of generation or transmission which require substitute power for a continuous period in excess of six (6) hours. Where forced outages are not as a result of faulty equipment, faulty manufacture, faulty design, faulty installations, faulty operation, or faulty maintenance, but are Acts of God, riot, insurrection or acts of the public enemy, then the utility may, upon proper showing, with the approval of the Commission, include the fuel cost of substitute energy in the adjustment. Until such approval is obtained, in making the calculations of fuel cost (F) in subsection (3)(a) and (b) above the forced outage costs to be subtracted shall be no less than the fuel cost related to the lost generation.

(5) Sales (S) shall be all KWH's sold, excluding inter-system sales. Where, for any reason, billed system sales cannot be coordinated with fuel costs for the billing period, sales may be equated to the sum of (i) generation, (ii) purchases, (iii) interchange-in, less (iv) energy associated with pumped storage operations, less (v) inter-system sales referred to in subsection (3)(d) above, less (vi) total system losses. Utility used energy shall not be excluded in the determination of sales (S).

(6) The cost of fossil fuel shall include no items other than the invoice price of fuel less any cash or other discounts. The invoice price of fuel includes the cost of the fuel itself and necessary charges for transportation of the fuel from the point of acquisition to the unloading point, as listed in Account 151 of FERC Uniform System of Accounts for Public Utilities and Licenses.

(7) At the time the fuel clause is initially filed, the utility shall submit copies of each fossil fuel purchase contract not otherwise on file with the Commission and all other agreements, options or similar such documents, and all amendments and modifications thereof related to the procurement of fuel supply and purchased power. Incorporation by reference is permissible. Any changes in the documents, including price escalations, or any new agreements entered into after the initial submission, shall be submitted at the time they are entered into.

Where fuel is purchased from utility-owned or controlled sources, or the contract contains a price escalation clause, those facts shall be noted and the utility shall explain and justify them in writing. Fuel charges which are unreasonable shall be disallowed and may result in the suspension of the fuel adjustment clause. The Commission on its own motion may investigate any aspect of fuel purchasing activities covered by this regulation.

(8) Any tariff filing which contains a fuel clause shall conform that clause with this regulation within three (3) months of the effective date of this regulation. The tariff filing shall contain a description of the fuel clause with detailed cost support.

(9) The monthly fuel adjustment shall be filed with the Commission ten (10) days before it is scheduled to go into effect, along with all the necessary supporting data to justify the amount of the adjustment which shall include data and information as may be required by the Commission.

(10) Copies of all documents required to be filed with the Commission under this regulation shall be open and made available for public inspection at the office of the Public Service Commission pursuant to the provisions of KRS 61.870 to 61.884.

(11) At six (6) month intervals, the Commission will conduct public hearings on a utility's past fuel adjustments. The Commission will order a utility to charge off and amortize, by means of a temporary decrease of rates, any adjustments it finds unjustified due to improper calculation or application of the charge or improper fuel procurement practices. The Commission will review the operation of the partial passthrough provision and provide for charging off by means of a temporary decrease or increase in rates, any difference over the review period between allowed fuel clause revenues and fuel expenses that exceeds 3 percent of total fuel expenses.

(12) Every two (2) years following the initial effective date of each utility's fuel clause the Commission in a public hearing will review and evaluate past operations of the clause, disallow improper expenses and to the extent appropriate re-establish the fuel clause charge in accordance with subsection (2) of this section. (\* Ky.R. 822; eff. 4-7-82.)

COMMONWEALTH OF KENTUCKY  
PUBLIC SERVICE COMMISSION

ADMINISTRATIVE CASE NO. 309

SUMMARY OF FINDINGS

On September 3, 1986, the Commission issued an Order to investigate whether the Fuel Adjustment Clause ("FAC") should be modified or eliminated. A public hearing was held on January 13, 1987.

Policy Findings

The standardized FAC established in 1978 has generally met the major objectives of the Commission's review at that time. Those objectives were (1) to bring fuel charges under appropriate Commission regulatory processes; (2) to standardize the FAC for all jurisdictional electric utilities; (3) to insert fuel charges into base rates on a systematic basis; (4) to introduce incentives for management to hold down fuel costs; and (5) to represent a responsible, workable regulatory procedure for handling fuel clause matters in Kentucky.

In considering modification or elimination of the FAC, the Commission has based its analysis on the following objectives and standards. A regulatory framework for recovery of fuel expenses should (1) provide incentives for efficient management of fuel costs; (2) provide information that permits the Commission to adequately monitor fuel costs to protect ratepayers; (3) be consistent for all jurisdictional utilities; (4) be fair in billing costs to the cost-causer; (5) be administratively workable and efficient; and (6) provide for fair regulation of both distribution and generation utilities. The decision to include a FAC depends in part on the extent of control or influence utilities have over fuel costs, the percentage of fuel costs to total utility operating costs and the variability of fuel prices.

Fuel costs are a utility's largest single cost, comprising 40 to 50 percent of total costs. Fuel costs are potentially highly variable. Distribution utilities with full requirements contracts for purchased power have minimal control over fuel costs in the short run. Generating utilities have less than complete control over fuel costs.

The systematic information filings and semi-annual hearings for regulatory oversight in the current FAC should be continued.

The FAC, as currently applied to distribution utilities, should not be changed.

Some expedited procedure for recovering generating utilities fuel costs is appropriate. Additional financial incentives for efficient management of fuel costs should be included in the procedure.

Two methods for including broad-based financial incentives were proposed. ESRG's primary recommendation was to abolish the FAC and deal with fuel costs in general rate cases. Under this proposal, a volatility threshold would provide a safety value against the effects of rapid changes in fuel costs. A special rate hearing focused on fuel costs could be initiated anytime cost changes exceeded the threshold limits. ESRG's alternate proposal was to have a partial passthrough of fuel cost deviations from a base level.

A partial passthrough method is preferable to the threshold method because it presents less financial and administrative uncertainties. The percent of passthrough should be set at 90 percent of deviations from base fuel cost. Further protection against large gains or losses from extreme fluctuations in fuel costs should be provided by a cap of 3 percent of total fuel costs on fuel cost deviations absorbed or retained by utilities in each 6-month review period.

Including detailed power plant performance standards in the FAC would not be as efficient a way of providing additional financial incentives as the more broadly based partial passthrough method.

A provision for billing over/under-recoveries of FAC charges should be extended to generating utilities.

Provisions in the current FAC for forced outages and recovery lags should remain unchanged.