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## APPENDIX II

# Appraisal of Price Series Collected by the Bureau of Labor Statistics and Recommendations for their Revision

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THE LARGE body of statistical information collected currently concerning the bituminous coal industry made it necessary to confine any intensive appraisal of the data and recommendations for their improvement to prices. The Bureau of Labor Statistics, which has begun to revise its wholesale and retail price reporting services, offered to cooperate with the Committee. This offer was accepted because it was apparent that in view of the wide-spread area in which bituminous coal is produced and sold, only a Federal agency could assume the task of collecting an adequate sample of wholesale and retail prices. Accordingly, this Appendix, which fulfills the third specific aim of the Committee, is restricted to appraisals of the wholesale and retail price series being collected by the Bureau of Labor Statistics and recommendations for their revision.

### A WHOLESALE PRICES

An appraisal by the Committee and the Wholesale Price Division of the Bureau of Labor Statistics revealed that certain modifications would add greatly to the usefulness of price data for bituminous coal. It is especially important that changes be made in the types of price collected, the specifications for which quotations are secured, and in the 'coverage' or the distribution of the sample among the various markets and coal producing fields. The practices in need of revision are discussed below.

### *Types of price*

The data used for prices of bituminous coal are quotations f.o.b. cars destination. The selection of a destination price in the early 'twenties was made after discussions with interested agencies and individuals. It was thought that such prices would represent the wholesale prices of bituminous coal in terms of the Bureau's concept of 'wholesale prices'. The use of destination prices would also obviate any criticism with respect to duplication of governmental work such as the sales realization values f.o.b. mines compiled by the Bureau of Mines. Furthermore, it would carry a step forward the work being performed by recognized trade journals which quote prices f.o.b. mines for delivery in designated cities.

The Committee recognizes that both destination and f.o.b. mine prices should be collected, but of the two, the latter is the more responsive to changing conditions in the industry. The freight charges included in the destination prices often represent an amount equal to or even greater than the price at the mine. This item, over which the coal operators have no control, added to the f.o.b. mine price, gives a total figure that is often misused in comparisons of long- and short-time changes in the prices of coal with those of the prices of other commodities. Many series used by the Division are not on a delivered basis, textile prices, for example, being f.o.b. the mill. The general practice of the bituminous coal industry is to sell coal f.o.b. the mine. Although freight charges enter into the total cost of the coal to the purchaser, he is usually billed for coal f.o.b. mine and assumes responsibility for transportation charges.

A second criticism arises out of the fact that the destination prices used are merely quotations. Such figures are more representative of what the mines and their selling agents hope to receive than of the prices at which the coal is actually sold. This limitation is inherent in the use of any quotation as a indicator of price.

### *Specifications*

The Division's current practice of grouping a variety of sizes of coal under the classification 'prepared sizes' conceals the diversity of prices arising out of differences in these sizes. Furthermore, none of the data reveals the variation in prices among

the producing fields or even the differences between low and high volatile coals.

### *Coverage*

The important markets are not adequately represented. Of the 63 quotations included in the index of bituminous coal prices (Table I-2), 3 quotations are from Chicago, 2 from New York, 2 from Pittsburgh, and none from Philadelphia, while 9 are used from Minneapolis, 8 from St. Louis, 7 from Indianapolis, 6 from Atlanta, and 5 from Birmingham. Furthermore, the sample of quotations from various sections of the United States is not distributed in accordance with their relative importance in the consumption of bituminous coal. Only 4 quotations are from the Middle Atlantic states, including the 2 from Pittsburgh, and only 1 from New England although there are 22 from the East North Central states, 20 from the West North Central area, and 10 from the South Atlantic region. All 5 quotations from the East South Central states are from Birmingham. The West South Central states are represented by 1 quotation from New Orleans. No quotations are used from the Mountain and Pacific regions.

### Recommendations<sup>1</sup>

All these defects in its present data were recognized by the Wholesale Price Division. The following recommendations for the revision of its work were developed cooperatively by it and the Committee. They must be considered in connection with the Bituminous Coal Act of 1937. It is possible that a major portion of the data needed may be made available as a by-product of the work of the National Bituminous Coal Commission. However, an important prerequisite of a price series is continuity. Therefore, until the Commission is fully organized and its data are appraised, it is recommended that the Wholesale Price Division of the Bureau of Labor Statistics be requested to collect, compile, and publish data on the prices of bituminous coal in accordance with these suggestions.

<sup>1</sup> These recommendations are based upon the report of a subcommittee composed of Jesse M. Cutts, P. A. Hollar, Allan Willett, W. H. Young, and Waldo E. Fisher, Chairman, and were approved by the Committee.

*Frequency of collection*

Price data should be collected monthly. Because operators keep their records on a monthly basis it is deemed inadvisable to attempt to collect weekly prices.

*Source and specifications of data to be collected*

It is recommended that the data for the computation of mine prices be obtained from coal operators on standard forms prepared by the Wholesale Price Division of the Bureau of Labor Statistics. The reporting companies would be asked to supply for each specification for which data are desired the total tonnage shipped each month and the total proceeds. From these data the Bureau would compute the average realized price for each size.

The Committee gave careful attention to the development of the specifications or size classes for which coal prices should be collected. It is of the opinion, however, that the specifications suggested below should be submitted to representative operators in the important coal regions to determine whether they are applicable to bituminous coal fields in general.

NUMBER	SIZE	SPECIFICATIONS IN INCHES
1	Lump, block, etc.	4 and over
2	Egg, chunk, etc.	2 to 8
3	Nut, stove, furnace, etc.	1 $\frac{1}{4}$ to 3
4	Nut, nut and slack, etc.	Under 2
5	Domestic stoker	
6	Mine run	

The use of the suggested sizes would supersede the Division's present classification of bituminous coal into mine run, prepared sizes, and screenings. The proposed classification is in line with the Division's present policy of adopting more definite specifications for all items covered in its wholesale price work.

It is recognized that the above size classes overlap and that their adoption would add to the difficulty of interpreting the price data by sizes. The use of arbitrary size classes that do not overlap would, however, tend to encourage the operators to force their various shipments into the classes specified and thus impair the data for the individual size classes. Moreover, since the Committee's objective is to obtain from reporting mines not

only realized prices by major size classifications but also the average realized prices of all coal shipped in a given month, and since it is the market practice to divide coal into many different sizes, the number and specifications of which often vary from month to month, overlapping categories seem unavoidable.

Because of the difficulties of defining contract and spot sales in terms easily understood by operators and because of the work involved in collecting and compiling these two sets of prices, it is deemed inadvisable to distinguish between these items. The Committee, therefore, recommends the collection of realized prices for all shipments.

#### *Collection of mine prices by market areas not recommended*

The Committee recognizes that the *mine price* charged on a given day for a particular size may vary for different market areas. It believes, however, that such price differentials are not substantial in most instances, and that the cost of collecting prices by market areas would be out of all proportion to the usefulness. It recommends, therefore, that mine prices should be collected for producing fields and not for market areas.

#### *Coverage*

In the opinion of the Committee, the producing fields from which price data are to be obtained should conform as far as possible to the classification of producing areas designated by the Bituminous Coal Act of 1937. If funds are available or can be obtained, the Committee recommends that prices be collected and computed for each district established by the Act. If this is not feasible, certain fields, particularly those west of the Mississippi River, may be combined. Combinations, however, should not cut across the boundaries fixed by the Act for individual fields, subdivisions, etc. It is especially important that fields producing low and medium volatile coal should not be combined with any producing high volatile coal.

Data should be obtained from representative producers in each field and in sufficient number to represent conditions existing in each field or district. The Committee recommends that the Wholesale Price Division send schedules to at least 189 companies selling their coal in the commercial markets with the request that the data be supplied by districts. The suggested allocation of schedules among the 23 producing fields is given in

Table II-1. It is recognized, of course, that actual experience with price collection will suggest modifications. The proportion of the total tonnage for which prices are to be obtained in a given district and the names of the companies that are to be re-

TABLE II-1

Number of Reporting Companies and Percentage of Total Production by Producing Districts

No.	PRODUCING DISTRICTS Name	NUMBER OF REPORTING MINES	PERCENTAGE OF TOTAL PRODUCTION IN 1934 *
1	Eastern Pennsylvania	30	10.55
2	Western Pennsylvania	20	15.04
3	Northern West Virginia	10	5.33
4	Ohio	10	5.81
5	Michigan	3	.18
6	Panhandle of West Virginia	3	1.11
7	Southern Numbered 1	15	12.32
8	Southern Numbered 2	25	20.23
9	Western Kentucky	3	2.20
10	Illinois	20	11.41
11	Indiana	10	4.14
12	Iowa	3	.93
13	Southeastern	3	2.96
14	Arkansas-Oklahoma	4	.39
15	Southwestern	4	2.06
16	Northern Colorado	3	.64
17	Southern Colorado	3	.99
18	New Mexico	3	.16
19	Wyoming	4	1.21
20	Utah	3	.67
21	North and South Dakota	3	.51
22	Montana	3	.73
23	Washington	4	.39
	All fields	189	100.00

\* Preliminary.

requested to supply price data may be determined by the Wholesale Price Division in cooperation with the Bureau of Mines.

*Computation of average prices*

The Committee recommends that the Wholesale Price Division compute the average realized prices of: (1) mine-run coal and each of the previously specified sizes for each district; (2) all sizes combined for each field; (3) all sizes combined for the

country as a whole. In addition, it is recommended that in the case of Eastern Pennsylvania and Southern No. 1 separate averages be shown for low, medium, and high volatile coals.

The average price for each specified classification for each district would be computed from the reported data based on identical firms for at least two successive periods. Thus, the average realized price for each classification for each district would be determined by totaling the reports for each size for each district and dividing dollars received by tonnage shipped.

To calculate average prices for all sizes for each field and for the country as a whole it will be necessary to develop fixed weights. It is suggested that the Wholesale Price Division send questionnaires to commercial companies producing 200,000 tons or more during 1936. These companies would be requested to supply for all shipments, exclusive of coal used at the mine, the total annual shipments in tons for each of the specifications designated above. These data would disclose the relative importance of each specification and would enable the Wholesale Price Division to establish fixed weights to be used in the computation of average prices by districts and for the country as a whole.

The Committee recommends that fixed rather than variable weights be used in all computations of average prices. The weights should be examined from time to time to ensure their representativeness. The tonnage data secured from the monthly reports could serve as a rough check on changes in the relative importance of specific sizes of coal.

#### *F.o.b. destination prices*

For special studies of prices it is important to know prices f.o.b. destination in addition to those f.o.b. mine. The destination price, which is essentially the mine price plus freight, represents the cost of coal to the purchaser, but the f.o.b. mine price represents the amount received by the operator. In the absence of specifically reported f.o.b. destination prices it is recommended that destination prices be obtained by adding the established freight rates to the computed mine prices. The freight rates from any producing field to any designated market can be secured from the Interstate Commerce Commission. Prices computed in this manner may not be accurate, but they will be satisfactory for most purposes.



The list of cities for which destination prices are now obtained is inadequate. From the 1929 Census of Manufactures the 100 largest coal consuming counties could be ascertained. It is recommended that among them not less than 50 cities be chosen for which prices f.o.b. destination should be compiled. The Wholesale Price Division should work closely with the Bureau of Mines in the selection of the counties and cities to be covered.

### *Provision for splicing series*

In order to splice the series of prices collected under the Division's present procedure with the series that may be collected under the procedure approved by the Committee, it is recommended that prices be collected in accordance with the present procedure for at least a year after any revised methods are introduced.

### *Publication*

The Wholesale Price Division is primarily interested in the trend of average realized prices for the country as a whole. Limitations of space and cost may preclude monthly publication of detailed prices by sizes and fields and at selected destinations. At less frequent intervals, however, the Division may be able to publish general summaries of these data. It is recommended that the detailed data be made available each month in mimeographed form or that they be supplied to coal journals or other private agencies interested in publishing them. This procedure will meet the requirements of the bituminous coal industry and make possible analyses of prices by other agencies. No data that will in any way disclose the identity of individual companies should be published or furnished to anyone.

## B RETAIL PRICES

Appraisal of the retail coal prices compiled by the Retail Price Division of the Bureau of Labor Statistics in connection with its price series for household heating fuels revealed that the usefulness of the price data for bituminous coal would be greatly enhanced if the procedure were modified in several ways. The elements of the methods used by the Division prior to 1937,<sup>2</sup> which needed to be revised, were primarily concerned with

<sup>2</sup> For a description of procedure used prior to 1937 see Ap. I, A, 2.

specifications of the published series, the coverage of the principal retail markets, the frequency of collection, and the computation of average prices.

### *Specifications*

In the past, the published series of retail prices of bituminous coal differentiated between low and high volatile coal and showed average prices for run-of-mine coal and for prepared sizes as a group. The practice of combining a variety of sizes under the classification 'prepared sizes' conceals the diversity of prices arising from differences in sizes and precludes analyzing variations in prices attributable to this factor. It is believed that retail prices should be shown for representative sizes as well as for all prepared sizes.

### *Coverage*

Retail prices of bituminous coal were published for only 38 of the 51 cities for which data on food costs and average prices on electricity were collected. No prices were published for New England, and Pittsburgh alone was covered among the cities in the Middle Atlantic States. Since the household consumption of bituminous coal has increased substantially in these areas during recent years, the number and distribution of cities would seem to be inadequate.

The number of reporting dealers in each city has fluctuated from time to time but was seldom allowed to drop below 3 or increase to more than 6. It is deemed advisable to raise the upper limit and to increase the number of reporters in virtually all the larger cities.

### *Frequency of collection*

The present practice of the Bureau of collecting retail coal prices on the 15th of March, June, September, and December does not adequately reveal seasonal fluctuations, for 70 per cent of the coal for household purposes is sold between September and March, and most of it is sold nearer December prices than at March, June, or September quotations.

### *Computation of average prices*

Only the most important grades and sizes of coal sold in each city for household consumption were used for computing the

B. L. S. 1266  
June 4, 1917

U. S. DEPARTMENT OF LABOR  
BUREAU OF LABOR STATISTICS  
WASHINGTON

RETAIL PRICES  
FUEL A

CONFIDENTIAL

GENTLEMEN: Please enter the cash delivered retail price, as of the 15th of the current month, for each fuel item listed below which you sell to family trade. It will be appreciated if you will identify each item by its customary trade name (mine, district, or seam). Give solid fuel prices on basis of delivery at curb, or into bin without extra handling or additional charge. Please write comments regarding items or prices on the reverse side of this sheet. Kindly return this form at your earliest convenience.

Very truly yours,  
ISADOR LUBIN,  
Commissioner of Labor Statistics.

ARTICLE, TRADE NAME, AND UNIT	CASH PRICE	ARTICLE, TRADE NAME, AND UNIT	CASH PRICE
<b>COAL, PER TON (2,000 lb.)</b>	<i>1-ton lots</i>	<b>COKE, PER TON (2,000 lb.)</b>	<i>1-ton lots</i>
Anthracite, Pennsylvania, white ash:			
02 Stove.....		73 Egg.....	
04 Chestnut.....			
06 Pea.....		<b>BRIQUETS, PER TON (2,000 lb.)</b>	
08 Buckwheat No. 1.....		76.....	
Anthracite, other than Pennsylvania:		<b>HEATING OIL, PER 100 GALLONS</b>	<i>150-gal. lots</i>
12 Egg.....		82 Range oil.....	
15 Nut.....		84 Fuel oil No. 1.....	
Bituminous, low and medium volatile (smokeless):		86 Fuel oil No. 2.....	
21 Lump.....		87 Fuel oil No. 3.....	
23 Egg.....		88 Fuel oil No. 4.....	
25 Nut.....		<b>WOOD, PER CORD (128 cu. ft.)</b>	<i>1-cord lots</i>
27 Stoker <sup>1</sup> .....		(Seasoned, sawed 12 to 24 inches and split)	
29 R. O. M. <sup>1</sup> .....		82 Softwood.....	
Bituminous, high volatile:		94 Hardwood.....	
31 Lump.....			
		<b>OTHER FUELS</b>	
33 Egg.....			
35 Nut.....			
37 Stoker <sup>1</sup> .....			

<sup>1</sup> Domestic.

Is there a sales tax on these fuels? ..... percent. Is tax included in above prices? .....

Additional charge for carrying coal from curb to bin is ..... per ton.

Name of person furnishing information .....

FIGURE 2

S. L. O. 1119  
June 1, 1922

U. S. DEPARTMENT OF LABOR  
BUREAU OF LABOR STATISTICS  
WASHINGTON

**RETAIL PRICES**  
**FUEL B**

CONFIDENTIAL

GENTLEMEN: Please enter the cash delivered retail price, as of the 15th of the current month, for each fuel item listed below which you sell to family trade. It will be appreciated if you will identify each item by its customary trade name (mine, district, or seam). Give solid fuel prices on basis of delivery at curb, or into bin without extra handling or additional charge. Please write comments regarding items or prices on the reverse side of this sheet. Kindly return this form at your earliest convenience.

Very truly yours,  
ISADOR LUBIN,  
Commissioner of Labor Statistics.

ARTICLE, TRADE NAME, AND UNIT	CASH PRICE	ARTICLE, TRADE NAME, AND UNIT	CASH PRICE
<b>COAL, PER TON (2,000 lb.)</b>	<i>1-ton lots</i>	<b>COAL, PER TON (2,000 lb.)</b>	<i>1-ton lots</i>
Anthracite, Pennsylvania, white ash:		Bituminous, high volatile, other than eastern:	
03 Stove.....		61 Lump.....	
04 Chestnut.....		62 Egg.....	
05 Pea.....		63 Nut.....	
06 Buckwheat No. 1.....		64 Stoker.....	
Anthracite, other than Pennsylvania:			
12 Egg.....			
15 Nut.....			
Bituminous, low and medium volatile (rock- less):			
21 Lump.....			
23 Egg.....			
25 Nut.....			
27 Stoker.....			
29 R. O. M. <sup>1</sup> .....			
Bituminous, eastern high volatile (Ohio and Pennsylvania to Alabama):			
31 Lump.....			
33 Egg.....			
35 Nut.....			
37 Stoker.....			
		<b>COKE, PER TON (2,000 lb.)</b>	
		73 Egg.....	
		<b>BRIQUETS, PER TON (2,000 lb.)</b>	
		77.....	
		<b>HEATING OIL, PER 100 GALLONS</b>	<i>100-gal lots</i>
		84 Fuel oil No. 1.....	
		85 Fuel oil No. 2.....	
		86 Fuel oil No. 3.....	
		87 Fuel oil No. 4.....	
		88 Fuel oil No. 5.....	
		<b>WOOD, PER CORD (128 cu. ft.)</b>	<i>1-cord lots</i>
		(Seasoned, sawed 12 to 24 inches and split)	
		89 Softwood.....	
		90 Hardwood.....	

<sup>1</sup> Domestic.

Is there a sales tax on these fuels? ..... percent. Is tax included in above prices? .....

Additional charge for carrying coal from curb to bin is ..... per ton.

<sup>1</sup>Name of person furnishing information .....

published average prices, and these figures were arithmetic averages. It seems advisable to increase the number of items priced in these cities and to abandon the old method of arriving at a representative price by taking a simple average of all quotations.

### Modifications of Procedure during 1937<sup>3</sup>

The following outline indicates the more important aspects of the changes in the retail price series for bituminous coal that have been put into effect during 1937.

#### *Specifications*

In order to list the sizes and grades of coal selected as most representative of household consumption in the various sections of the United States, new retail fuel price schedules were printed early in 1937. These schedules were used for an experimental collection in February and for the regular coal price reports of March and June. A second series of schedules, incorporating the changes suggested by experience with the preliminary forms, was printed in June (Figures 2 and 3). Coal sold under the same name in different sections of the United States varies so much in size that it is inadvisable to give exact dimensions.

#### *Coverage*

The distribution of the retail fuel price schedules used in each city of the 9 regional areas and the number of cooperating reporters in each city are shown in Table II-2. The 51 cities for which price data are obtained include all that are covered at present for the food cost indexes and the average prices of electricity. This change adds 13 representative markets in New England and the Middle Atlantic States to the 38 cities for which prices of bituminous coal have been published since 1923.

#### *Frequency of collection*

Prices are to be collected quarterly on: March 15, June 15, September 15, and December 15. These dates correspond with the dates for the quarterly cost-of-living surveys. If possible, it is hoped that prices will also be collected on the 15th of January,

<sup>3</sup> Prepared by the Retail Price Division, Bureau of Labor Statistics. The major changes outlined in this section have been incorporated in the revised series of retail prices now being published by the Bureau.

TABLE II-2

## Distribution of Retail Fuel Schedules and Reporters, by Regional Areas and Cities

REGIONAL AREA AND CITY	SCHEDULE	NUMBER OF REPORTERS	REGIONAL AREA AND CITY	SCHEDULE	NUMBER OF REPORTERS
<b>New England</b>		<b>42</b>	<b>South Atlantic</b>		<b>46</b>
Boston	A	10	Atlanta	A	5
Bridgeport	A	5	Baltimore	A	10
Fall River	A	5	Charleston, S. C.	A	4
Manchester	A	4	Jacksonville	A	4
New Haven	A	6	Norfolk	A	4
Portland, Me.	A	5	Richmond	A	5
Providence	A	7	Savannah	A	5
			Washington, D. C.	A	9
<b>Middle Atlantic</b>		<b>61</b>	<b>East South Central</b>		<b>22</b>
Buffalo	A	8	Birmingham	B	6
Newark	A	8	Louisville	B	7
New York	A	14	Memphis	B	5
Philadelphia	A	12	Mobile	B	4
Pittsburgh	A	7			
Rochester	A	8	<b>West South Central</b>		<b>18</b>
Scranton	A	4	Dallas	B	4
			Houston	B	4
<b>East North Central</b>		<b>73</b>	Little Rock	B	4
Chicago	B	14	New Orleans	B	6
Cincinnati	B	8			
Cleveland	B	10	<b>Mountain</b>		<b>18</b>
Columbus, Ohio	B	5	Butte	A	4
Detroit	B	12	Denver	A	8
Indianapolis	B	6	Salt Lake City	A	6
Milwaukee	B	10			
Peoria	B	4	<b>Pacific</b>		<b>21</b>
Springfield, Ill.	B	4	Los Angeles	A	4
			Portland, Ore.	A	6
<b>West North Central</b>		<b>31</b>	San Francisco	A	5
Kansas City	B	7	Seattle	A	6
Minneapolis	B	7			
Omaha	B	5			
St. Louis	B	7			
St. Paul	B	5			
			<b>TOTALS</b>	<b>A</b>	<b>188</b>
				<b>B</b>	<b>141</b>
					<b>329</b>

TABLE II-3

## Relative Heating Requirements of 51 Cities, Based upon Dwelling-Day-Degrees \*

REGIONAL AREA AND CITY	DWELLING- DAY-DEGREES OF HEAT Per- 1,000 units	Per- centage of total	REGIONAL AREA AND CITY	DWELLING- DAY-DEGREES OF HEAT Per- centage of total	Per- centage of total
New England	2,291,730	6.1	South Atlantic	1,987,300	5.3
Boston	1,068,790	2.9	Atlanta	190,440	.5
Bridgeport	203,630	.5	Baltimore	864,040	2.3
Fall River	159,760	.4	Charleston, S. C.	28,870	.1
Manchester	137,030	.4	Jacksonville	29,060	.1
New Haven	231,790	.6	Norfolk	104,500	.3
Portland, Me.	125,630	.3	Richmond	165,890	.4
Providence	365,100	1.0	Savannah	32,470	.1
			Washington, D. C.	573,030	1.5
Middle Atlantic	14,427,110	38.5	East South Central	703,910	1.9
Buffalo	949,090	2.5	Birmingham	147,230	.4
Newark	619,870	1.7	Louisville	334,890	.9
New York	9,135,100	24.3	Memphis	198,240	.5
Philadelphia	2,187,190	5.8	Mobile	23,550	.1
Pittsburgh	807,810	2.2			
Rochester	544,780	1.5	West South Central	391,500	1.1
Scranton	183,270	.5	Dallas	139,610	.4
East North Central	11,807,370	31.4	Houston	85,740	.2
Chicago	5,282,960	14.1	Little Rock	55,670	.2
Cincinnati	575,800	1.5	New Orleans	110,480	.3
Cleveland	1,354,260	3.6			
Columbus, Ohio	404,120	1.1	Mountain	735,030	1.9
Detroit	2,380,240	6.3	Bumc	79,230	.2
Indianapolis	523,130	1.4	Denver	464,760	1.2
Milwaukee	1,028,960	2.7	Salt Lake City	191,040	.5
Peoria	158,350	.4			
Springfield, Ill.	99,550	.3	Pacific	1,947,710	5.1
West North Central	3,278,500	8.7	Los Angeles	503,380	1.3
Kansas City	521,910	1.4	Portland, Ore.	385,160	1.0
Minneapolis	915,330	2.4	San Francisco	562,670	1.5
Omaha	327,890	.9	Seattle	496,500	1.3
St. Louis	972,220	2.6			
St. Paul	541,150	1.4	All Cities	37,570,160	100.0

\* Preliminary day-degrees of heat for 49 of these cities were computed by Arthur H. Senner, Bureau of Engineering, U. S. Department of Agriculture.

February, October, and November, when the retail sales of household fuels are substantial.

### *Details of methodology*

The retail fuel price schedules are distributed and returned by mail. The schedules are prepared for mailing by typing the identification names of the more important coals consumed in each city on the outgoing forms.

The Division is requesting a cash retail price, as of the 15th of

TABLE II-4

### Retail Fuel Price Weighting Factors for Richmond, Virginia

FUEL ITEM	ESTIMATED CONSUMPTION *	HEAT PER UNIT	HEAT PRODUCED	
		Thousands of b.t.u.'s	Millions of b.t.u.'s	Percentage of total
Anthracite, Pa.	20,000 tons	27,000	540	4
Bituminous, low volatile	300,000 "	29,000	8,700	63
Bituminous, high volatile	50,000 "	28,000	1,400	10
Coke	15,000 "	27,000	405	3
Briquets	5,000 "	28,000	140	1
Fuel oil	10,000,000 gal.	160	1,600	12
Wood	50,000 cords	21,000	1,050	7
Total			13,835	100

\* As reported by the Secretary of the Retail Coal Dealers Association

the month, for sales in one-ton lots delivered at curb or into the customer's bin without extra handling or additional charge. Each dealer has been requested, on a special questionnaire, to indicate any deviations in his selling practice from these specified conditions.

No adjustment has been made for changes in the quality or preparation of the coal sold to household consumers. Only minor changes have occurred and these have been introduced gradually.

### *Weighting factors*

Average prices of the different grades and sizes of coal in the 51 cities are combined with weighting factors based upon esti-



mates of the volume of sales of each grade or size in each city. Sales records and other information submitted by the fuel dealers and their associations in the various cities have provided the basis for most of these estimates.

During 1934 the Cost of Living Division of the Bureau of Labor Statistics conducted family expenditure surveys in each of the 51 cities included in the retail fuel price series. Summaries of these surveys will provide valuable information on household fuel consumption in each city. The family expenditure data, however, show fuel consumption only by type and do not furnish the necessary detail for weighting prices by grade and size.

Fuel requirements for household heating in each of the 51 cities is estimated on the basis of the number of day-degrees of heat required during an average year and the number of dwell-

TABLE II-5

## Preliminary Weighting Factors for Richmond, Virginia

FUEL ITEM	WEIGHTING UNITS
Anthracite, Pa.	18
Bituminous, low volatile	278
Bituminous, high volatile	44
Coke	13
Briquets	4
Fuel oil	53
Wood	31
TOTAL	441

ing units affected (Table II-3). The number of day-degrees of heat for each city has been computed from Weather Bureau records of normal temperature in each city, based, in most cases, upon 30 or more years of observation. The day-degrees of heat for each month is the product of the number of days in the month and the number of degrees of normal temperature below 65 degrees Fahrenheit. The number of dwelling units has been based on the number of families shown in each city by the 1930 Census.

The dwelling-day-degrees of heat for each city can be checked against data that have been assembled on household fuel requirements. After discrepancies have been ironed out, a ratio distribution of heat requirements among the various cities can

be made. These ratios are taken as city weights and apportioned among the more important fuels in each city on the basis of their heat producing potentialities. This method of determining weighting factors is illustrated by Tables II-4 and II-5 which give a preliminary computation for Richmond.

Richmond requires 165,890,000 dwelling-day-degrees of heat during a normal year, as compared with 37,570,160,000 dwelling-day-degrees for the 51 cities included in the retail coal price series. On this basis, Richmond is 0.441 per cent of the total. If the total heat requirements for all 51 cities is adjusted to 100,000 units, the distribution of these units for the fuel items in Richmond would be as given in Table II-5.

### *Seasonal weighting factors*

A careful study of the effect of using weighting factors for combining the monthly prices into annual averages indicates that the work involved would not be justified, since the annual average would be changed by merely a fraction of one per cent. The relationship of the weighted and unweighted prices was found to be fairly constant, indicating that the price changes from year to year would be practically the same with either method. Consequently, it was decided to compute the annual average without the use of seasonal weights. This procedure has been approved by the Bureau of Mines, and its application to the average prices of anthracite is acceptable to the Anthracite Institute.

### *Other aspects*

The Bureau of Labor Statistics plans to expand its retail coal price reporting service to include all important competitive fuels. It is felt that the usefulness of this service will be enhanced if the full range of household heating fuels is covered.

It is hoped that personnel and funds will be made available for recomputing bituminous coal prices from 1928 to 1936 on the same basis as the new series.

### *Retail fuel price report, March 15, 1937*

Retail coal prices for March 15, 1937 were collected on the new fuel price schedules sent to all 51 cities. Sufficient quotations to justify a published average price were not obtained for bituminous coal in New Haven, Rochester, and Scranton. In many other cities quotations were obtained for only a few grades and

sizes, owing to their strategic position with reference to important sources of fuel.

### Recommendations of the Committee

The Committee approves the revision of procedure adopted by the Retail Price Division of the Bureau of Labor Statistics and used in its report on 'Retail Fuel Prices by Cities, March 15, 1937'. The continuation of these series and their extension to other cities, when such cities are included in the Bureau's general retail price reporting service, will provide data for analyzing the variations in prices in a given city that are attributable to differences in grade and size of coal, and will facilitate inter-regional comparisons between identical grades and sizes in order to determine variations in prices arising from differences between certain markets.

The Committee recommends that, if funds are available or can be obtained, retail prices of bituminous coal be collected monthly. If this is impossible, prices on the 15th of October, November, January, February, and April should be obtained in addition to the regular quarterly data.