(g) Their business is other than selling hearing aids to the public for a profit.

2. Misrepresenting in any manner:

(a) The nature or purpose of their business.

(b) The education or training of their sales personnel.

(c) The efficacy of their hearing aids.

3. Failing to deliver a copy of this order to cease and desist to all operating divisions of the corporate respondents and to all officers, managers and salesmen, both present and future, and any other person now engaged or who becomes engaged in the sale of hearing aids as respondents' agent, representative or employee; and failing to secure a signed statement from each of said persons acknowledging receipt of a copy thereof.

4. Failing to notify the Commission at least thirty (30) days prior to any proposed change in the corporate respondents such as dissolution, assignment or sale resulting in the emergence of a successor corporation, the creation or dissolution of subsidiaries or any other change in the corporations which may affect compliance obligations arising out of the order.

It is further ordered, That the initial decision, as modified by the accompanying opinion, and as above modified, be, and it hereby is, adopted as the decision of the Commission.

It is further ordered, That the respondents herein shall, within sixty (60) days after service upon it of this order, file with the Commission a report, in writing, setting forth in detail the manner and form in which it has complied with this order.

IN THE MATTER OF

KENNECOTT COPPER CORPORATION

ORDER, OPINION, ETC., IN REGARD TO THE ALLEGED VIOLATION OF SEC. 7 OF THE CLAYTON ACT

Docket 8765. Complaint, Aug. 5, 1968—Decision, May 5, 1971

Order requiring the nation's largest copper mining corporation with headquarters in New York City to divest itself within six months of the largest coal producer in the United States with headquarters in St. Louis, Mo., and not to make further acquisitions in the coal industry for the next ten years without prior Federal Trade Commission approval.

COMPLAINT

The Federal Trade Commission has reason to believe that Kennecott Copper Corporation, a corporation, has acquired the business

and assets of Peabody Coal Company, a corporation, in violation of Section 7 of the Clayton Act, as amended (15 U.S.C. Sec. 18); and therefore, pursuant to Section 11 of said Act, issues this complaint stating its charges as follows:

I

DEFINITIONS

1. For the purpose of this complaint the following definitions shall apply:

(a) "Coal" includes bituminous and sub-bituminous coal.

(b) "The Mountain Region" consists of Colorado, Utah, Wyomining, New Mexico, Montana, Arizona, Idaho, and Nevada.

II

RESPONDENT

Kennecott Copper Corporation

2. Respondent Kennecott Copper Corporation, herein referred to as "Kennecott," is a corporation organized and existing under the laws of the State of New York, with its executive offices located at 161 East 42nd Street, New York, New York.

3. Kennecott is the largest copper producer in the United States having accounted for approximately 33% of the 1,372,000 tons of primary copper produced domestically during 1966. Kennecott is also a substantial producer of lead, zinc, molybdenum and silver and is the nation's second largest producer of gold.

4. Kennecott's Western Mining Divisions operate four copper, and related metals, mining properties located in New Mexico (Chino Mines Division), Nevada (Nevada Mines Division), Arizona (Ray Mines Division), and Utah (Utah Copper Division).

5. Kennecott also operates an electrolytic copper refining plant at Baltimore, Maryland (Kennecott Refining Corporation), as well as a copper and other metal-producing and fabricating facility in Cleveland, Ohio (Chase Brass & Copper Company).

6. Kennecott, as a producer, smelter, refiner, and fabricator of copper and other metal products, consumes substantial amounts of electrical energy. During 1965 its total dollar purchases of electricity amounted to approximately $3,000,000, some 30% of which was purchased for use by its Western Mining Divisions.

7. Kennecott consumes varying quantities of natural gas, fuel oil and coal for energy purposes. During 1965, 225,000 tons of coal were purchased by Kennecott, approximately 134,000 tons of which were

bought by its Nevada Mines Division. Kennecott uses such fuels principally to generate substantial quantities of electrical power, primarily for use in its metal mining and processing operations. On occasion Kennecott has also sold certain quantities of electrical power to utility companies and others.

8. During 1966 Kennecott and its wholly owned subsidiaries had sales of metals and metal products of $739,714,423 which, with miscellaneous revenues of $11,124,110, resulted in a net income of $125,375,300. Total consolidated assets of Kennecott as of December 31, 1966 were $1,075,245,000. Kennecott's rate of return on stockholders' investment during 1966 was 13.6%. Among all industrial corporations, Kennecott ranked 55th in terms of assets and 111th in terms of sales in 1966.

9. Beginning on or about April 1963, Kennecott undertook an intensive investigation of the feasibility of entering the coal industry on a local, regional, national and international scale. During the course of this investigation, Kennecott, among other things, engaged outside coal consultants; studied the availability of coal lands and leases; attempted to negotiate options to purchase selected coal reserves; negotiated an option to purchase coal reserves; had drilling and engineering studies conducted to determine the extent of coal reserves on the optioned land; explored the possibility of supplying the coal then being used by its Nevada Mines Division; studied the possibility of converting its Utah Copper Division to use coal; contacted potential purchasers of coal; investigated the competitive structure of local and regional coal markets; studied the cost of transporting coal; made detailed analyses of the profit potentials of a coal operation; and concluded it could mine coal as efficiently as any of the major national coal companies.

10. In June 1965 Kennecott's board of directors approved purchase of the Knight-Ideal coal reserves in Carbon County, Utah, and allocated funds for the opening and operating of a coal mine with a projected annual capacity of 1,165,000 tons, which would have made it one of the largest coal operations in the West. The coal to be produced was intended to be used by Kennecott to supply a part of its Utah Copper Division fuel requirements, all of its Nevada Mines Division fuel requirements, and to make sales to outside customers. During 1964 the Knight-Ideal Coal Company had mined 185,000 tons of coal from these Carbon County reserves.

11. Subsequent to its purchase of the Knight-Ideal reserves, Kennecott incorporated a Utah subsidiary, Kennecott Coal Company, to mine, sell and ship coal and to perform all functions ancillary

thereto. Kennecott Coal Company applied for and received acceptance for associate membership in the National Coal Association. Kennecott examined and bid upon coal lands in the immediate vicinity of the Knight-Ideal reserves, and recommended the purchase of additional coal lands, leases and options. Kennecott undertook a search for an experienced coal operating and marketing executive to assist its subsidiary in entering the coal industry and explored the possibility of acquiring certain local and regional coal companies. Such activities continued until Kennecott initiated plans to acquire Peabody Coal Company.

12. At all times relevant herein, Kennecott has sold and shipped its products in interstate commerce throughout the United States and is engaged in "commerce" within the meaning of the Clayton Act.

III

Peabody Coal Company

13. Peabody Coal Company, herein referred to as "Peabody," is a corporation organized and existing under the laws of the State of Illinois, with its principal office and place of business located at 301 North Memorial Drive, St. Louis, Missouri.

14. Peabody is one of the two leading producers of coal in the United States, having accounted for approximately 10.1% of the 530 million tons of coal produced domestically during 1966. In addition, during 1966, Peabody sold some 8,000,000 tons of brokerage coal produced by other coal companies.

15. Approximately 77% of Peabody's total coal sales are made to electric utility companies, making Peabody the nation's leading supplier of coal to such customers.

16. Peabody operates approximately 37 wholly-owned domestic mines (with an interest in 6 additional domestic mines) in the States of Alabama, Colorado, Illinois, Indiana, Kentucky, Missouri, Ohio and Oklahoma with additional operations being planned for Arizona. As of mid-1967, Peabody owned, leased or held under option in excess of 5.5 billion tons of estimated recoverable coal reserves located in fourteen States. In addition to such recoverable reserves, Peabody owns, leases, has under option or otherwise controls substantial acreage known to contain large amounts of coal, most of which is located in certain Western States.

17. Peabody's principal domestic marketing areas are the North Central and South Central regions of the United States. In addition, Peabody is aggressively expanding its marketing areas with

sizable long-term contracts in the Southeast and Southwest. Peabody also has extensive reserves of coal in sections of the Western and Southwestern States which offer promising opportunities for substantial tonnages of new business.

18. During 1966 Peabody and its subsidiaries had coal sales and other revenues of $233,923,483 providing a net income of $26,279,973. Total consolidated assets of Peabody as of December 31, 1966, were $315,629,163. Peabody's rate of return on stockholders' investment during 1966 was 14.6%. Among all industrial corporations, Peabody ranked 186th in terms of assets and 317th in terms of sales in 1966.

19. Kennecott's activities relating to its planned entry into the coal business were known to Peabody and caused it both to recognize Kennecott as a probable entrant and to undertake certain steps to discourage or prevent such entry.

20. At all times relevant herein, Peabody has sold and shipped its products in interstate commerce throughout the United States and is engaged in "commerce" within the meaning of the Clayton Act.

IV

The Nature of Trade and Commerce

21. Total domestic coal production in 1966 approximated 530 million tons having a mine mouth value of approximately $2.4 billion. Coal production in 1966 was approximately 20 million tons greater than in 1965.

22. In 1954 the four largest producers accounted for 15.8%, and the eight largest for 23.6%, respectively, of total domestic coal production.

23. This growth in concentration has been accompanied by a trend toward fewer but larger companies, with the number of concerns producing over 1 million tons of coal annually having declined by approximately 42% between 1949 and 1966. Mergers and acquisitions have contributed to the increase in concentration and the decline in the number of companies, with the three largest coal companies having acquired approximately 25 coal producers since January 1, 1955.

24. Electric power utility companies have become increasingly important as consumers of coal. In 1955 they represented approximately 33% and in 1966 approximately 54% of total domestic coal consumption.

25. Total coal production in the Mountain Region approximated 16.4 million tons in 1966. Of the eight States comprising the Moun-

tain Region, Colorado's production of 5.2 million tons and Utah's 4.6 million tons ranked them first and second, respectively, in both the Mountain Region and among all coal-producing States west of the Mississippi River.

26. In 1966 the four largest producers accounted for about 40% and the eight largest for about 63% of the total coal produced in the Mountain Region. In the State of Utah the top four companies accounted for approximately 75% of total coal production.

27. In 1955 electric power utilities consumed approximately 9% of the coal produced in the Mountain Region. By 1964 their consumption represented approximately 42% of the total coal produced in this area.

V

The Proposed Acquisition

28. A tentative agreement, signed July 1, 1966, and subsequently formalized on March 17, 1967, provided that Kennecott would acquire all of the business and assets of Peabody. Stockholders of Peabody approved the acquisition on January 26, 1968. On or about March 29, 1968, a subsidiary of Kennecott exchanged approximately $74 million in cash for the business and assets of Peabody, subject to the reservation of a production payment from Peabody's coal properties which was sold by Peabody for about $400 million in cash.

29. The combined assets of the two companies in 1966 were as great as the 44th largest industrial corporation as contrasted to Kennecott's rank of 55th in that year.

VI

Violations

30. The effect of the acquisition of Peabody by Kennecott has been, or may be, to lessen competition substantially or to tend to create a monopoly in violation of Section 7 of the Clayton Act, in the following ways, among others:

(a) The acquisition of Peabody by Kennecott has eliminated a substantial competitive factor in the coal business in Utah, the Mountain Region, and the United States and relevant portions thereof;

(b) Kennecott has been permanently eliminated as a substantial potential entrant into the production and sale of coal in Utah, the Mountain Region, and the United States and relevant portions thereof;

(c) Kennecott has been permanently eliminated as a substantial potential entrant into the production and sale of coal to electric utility companies in Utah, the Mountain Region, and the United States and relevant portions thereof;

(d) Kennecott has been permanently eliminated as a substantial potential competitor having an actual and potential influence upon competition in the coal industry in Utah, the Mountain Region, and the United States and relevant portions thereof;

(e) Concentration may be substantially increased, and the possibility of future deconcentration has been substantially reduced, in the production and sale of coal in Utah, the Mountain Region, and the United States and relevant portions thereof;

(f) The substitution of Kennecott, with its vast resources as the leading company in the copper industry and its existing relationships with utility companies, tends unduly to increase barriers to the entry of new competition, and to deprive smaller coal companies of an equal opportunity to compete in the sale of coal in Utah, the Mountain Region, and the United States and relevant portions thereof; and

(g) Users of coal have been, or may be, denied the benefits of free and open competition in the sale of coal in Utah, the Mountain Region, and the United States and relevant portions thereof.

Mr. Joseph J' O'Malley, *Mr. Wilbur W. Sacra, Jr.*, and *Mr. Charles Kadish*, supporting the complaint. (*Mr. Larry D. Sharp*, Law Clerk, on the Brief.)

Sullivan & Cromwell, New York, N.Y., by *Mr. Arthur H. Dean*, *Mr. Roy H. Steyer*, *Mr. John L. Warden*, and *Mr. John M. McCarthy;* and *Howrey, Simon, Baker & Murchison*, Wash., D.C., by *Mr. William Simon*, *Mr. John Bodner, Jr.*, and *Mr. Francis A. O'Brien*, for respondent.

INITIAL DECISION BY DONALD R. MOORE, HEARING EXAMINER

MARCH 9, 1970

CONTENTS

PRELIMINARY STATEMENT

The complaint in this proceeding was issued by the Federal Trade Commission on August 5, 1968, and was duly served on respondent. The complaint charges that respondent violated Section 7 of the Clayton Act, as amended, by reason of its acquisition of the business and assets of the Peabody Coal Company. Respondent filed its answer on October 11, 1968, admitting in part and denying in part the various factual allegations of the complaint and essentially denying any violation of law.

Following a series of prehearing conferences, the trial commenced on January 27, 1969, and concluded on June 11, 1969. Evidentiary hearings, at which 54 witnesses gave oral testimony, were held on 48 hearing days in New York, New York, San Francisco, California, Salt Lake City, Utah, and Washington, D.C. As a part of the hearings, the hearing examiner, in the company of counsel for both sides, made a physical inspection of some of the operations concerned in the case, including two of Peabody's coal mines in Illinois (strip and underground); Kennecott's open pit copper mine in Utah, together with related facilities; and certain coal mining properties and facilities in Carbon County, Utah.

The record consists of more than 6,400 pages of trial transcript and approximately 450 documentary exhibits comprising several thousand pages.

At the hearings, testimony and other evidence were offered in support of and in opposition to the allegations of the complaint. Such testimony and evidence have been duly recorded and filed. The parties were represented by counsel and were afforded full opportunity to be heard, to examine and to cross-examine witnesses, and to introduce evidence bearing on the issues.

After the presentation of evidence, proposed findings of fact and

conclusions of law and a proposed form of order, accompanied by supporting briefs, were filed by counsel supporting the complaint and by counsel for respondent. Reply briefs were also filed by counsel for both parties. Those proposed findings not adopted either in the form proposed or in substance are rejected as lacking support in the record or as involving immaterial matters.

Having heard and observed the witnesses and having carefully reviewed the entire record in this proceeding, together with the proposed findings and briefs filed by the parties, the hearing examiner makes the following findings of fact, enters his resulting conclusions, and issues an appropriate order.

As required by Section 3.51(b)(1) of the Commission's Rules of Practice, the findings of fact include references to the principal supporting items in the record. Such references are intended to serve as convenient guides to the testimony and to the exhibits supporting the findings of fact, but they do not necessarily represent complete summaries of the evidence considered in arriving at such findings. Where reference is made to proposed findings submitted by the parties, such references are intended to include their citations to the record.

References to the record are made in parentheses, and certain abbreviations are used:

CPF—Numbered paragraphs in the Proposed Findings of Fact, Conclusions of Law and Order filed by counsel supporting the complaint.

CPF–Br—Arguments and proposed conclusions in the nature of a brief contained in complaint counsel's Proposed Findings of Fact, Conclusions of Law and Order (see *infra.* p. 4).

CRB—Complaint Counsel's Reply to Respondent's Brief and Proposed Findings of Fact.

CX—Commission Exhibit.

RPF—Numbered paragraphs in Respondent's Proposed Findings of Fact and Conclusions of Law.

RB—Respondent's Brief.

RRB—Respondent's Reply Brief and Exceptions.

RRB–Ex—Respondent's exceptions (keyed to page numbers and contained in Respondents Reply Brief and Exceptions; see *infra*, p. 4).

RX—Respondents Exhibit.

Tr.—Transcript.

References to the proposed findings of counsel are to paragraph numbers preceded by "CPF" or "RFP," while references to the

briefs are to page numbers. Complaint counsel's arguments and proposed conclusions, in the nature of a brief, are interwoven with their proposed findings in a single document entitled "Proposed Findings of Fact, Conclusions of Law and Order." When reference is made to such material, as distinguished from numbered proposed findings (CPF), the citation is "CPF–Br," keyed to page numbers—for example, CPF–Br, pp. 19–20. Respondent filed its proposed findings and its brief separately, followed by a document entitled "Respondent's Reply Brief and Exceptions." The exceptions contained in this document are abbrevitaed "RRB–Ex" and keyed to the page numbers.

Sometimes references to testimony cite the name of the witness and the transcript page number without the abbreviation "Tr."—for example, Milliken 6295.

FINDING OF FACT

Kennecott Copper Corporation

Respondent Kennecott Copper Corporation (hereinafter referred to as "Kennecott" or as "respondent") is a corporation organized and existing under the laws of the State of New York, with executive offices at 161 East 42nd Street, New York, New York (Complaint and Answer, par. 2).

Kennecott was incorporated in 1915 (CX 6, p. 1) and has been engaged in the mining of copper and associated metals since that time (C. D. Michaelson 5422–23).

Kennecott is the largest copper producer in the United States, having accounted for approximately 33 percent of the 1,372,000 tons of primary copper produced domestically during 1966. Kennecott is also a substantial producer of molybdenum and silver and is the nation's second largest producer of gold. Kennecott is also a producer of lead and zinc. (Complaint and Answer, par. 3.)

Kennecott owns and operates four copper mines in the United States (Milliken 6301; C. D. Michaelson 5426). Each mine is a separate operating division within the Western Mining Divisions (sometimes referred to as "WMD"), which in turn, is a part of the Metal Division of the company: (1) the Utah Copper Division in Utah (sometimes referred to as "UCD"), (2) the Nevada Mines Division in Nevada, (3) the Ray Mines Division in Arizona, and (4) the Chino Mines Division in New Mexico. (Complaint and Answer, par. 4; C. D. Michaelson 5421, 5426; CX 9, p. 7.) Each of these mines is over 50 years old (C. D. Michaelson 5426–27).

Kennecott also operates a fifth copper mine. El Teniente mine in Chile, of which it is part owner. Kennecott had owned and operated

this mine for more than 50 years, but in 1967 it sold a 51 percent interest to Chile. Kennecott retains a 49 percent interest in the mine through its subsidiary, Braden Copper Company, which operates the mine under a management contract. (CX 9, pp. 9, 21, 26; C. D. Michaelson 5452.)

Kennecott Refining Corporation, a subsidiary of respondent Kennecott, operates an electrolytic copper refining plant in Anne Arundel County, Maryland. Through another subsidiary, Chase Brass & Copper Company, sometimes referred to as "Chase"), respondent Kennecott fabricates some copper and brass products. (Complaint and Answer, par. 5.) The principal customers for the copper and brass products manufactured by Chase are the automobile and construction industries and the electrical equipment manufacturers, such as General Electric and Westinghouse (C. D. Michaelson 5423).

Kennecott operates two lead and zinc mines in Missouri and Utah and partially owns a relatively small subsidiary that produces iron and titanium slag (CX 9, pp. 11, 13; Milliken 6301).

Before Kennecott acquired the assets of Peabody Coal Company in 1968, Kennecott's business was confined almost entirely to the production of copper and its by-products, such as gold, silver, and molybdenum, and the fabrication of certain copper and brass products by Chase (CX 9; C. D. Michaelson 5422–24). All of Kenecott's production of copper is sold in raw form to processors, with about 13 percent sold to Chase (C. D. Michaelson 5426). The company derives about 90 percent of its net income from its copper and copper-related operations (Milliken 6301).

As a producer, smelter, refiner, and fabricator of copper and other metal products, Kennecott consumes substantial amounts of electrical energy (Complaint and Answer, par. 6; RX 13–N, 13–Z–1). Respondent takes issue with the characterization "substantial" (Answer, par. 6; RRB–Ex 5), but for the purposes of these findings, the characterization may be accepted on the basis of the statistical record: Electrical power consumed each year by the Utah Copper Division alone totals 1.1 billion kilowatt hours (RX 13–Z–1), and the Magna power plant, with a capacity of 175,000 kilowatts, can produce enough power for a city of 350,000 population (RX 117). The issue to which this has primary relevance (Complaint, paragraph 30(f)) seemingly has been abandoned by complaint counsel. (Compare CPF–Br, par. (i)(1)–(7), pp. 125–26, with Complaint, par. 30(a)–(g).) (For further detail, see also CX 106.)

Kennecott consumes varying quantities of natural gas, fuel oil, and coal for energy purposes. During 1965, Kennecott purchased 225,000 tons of coal, of which approximately 134,000 tons were

bought by its Nevada Mines Division. Kennecott uses such fuels principally to generate substantial quantities of electric power, primarily for use in its metal-mining and processing operations. On occasion, Kennecott has sold some electric power to utility companies and others. (Complaint and Answer, par. 7; RX 13–N.) Respondent again questions the term "substantial" and dismisses its power sales as *de minimis*. (Answer, RRB–Ex 6.) However, substantially the same comment that was made in the preceding paragraph is applicable here. (For further detail, see CX 105A–B.)

During 1966, Kennecott and its wholly-owned subsidiaries had sales of metals and metal products of $739,714,423 which, with miscellaneous revenues of $11,124,110, resulted in a net income of $125,375,300. Total consolidated assets of Kennecott as of December 31, 1966, were $1,075,245,000. Kennecott's rate of return on stockholders' investment during 1966 was 13.6 percent. (Complaint and Answer, par. 8.) Among United States industrial corporations listed in "Fortune's 500" for 1966, Kennecott ranked 55th in terms of assets and 111th in terms of sales (CX 188, p. 6).

Although respondent denies the allegation that "Kennecott has sold and shipped its products in interstate commerce throughout the United States," it admits that at all times relevant to this proceeding it has been engaged in "commerce" within the meaning of the Clayton Act (Complaint and Answer, par. 12).

II. Peabody Coal Company

Prior to March 29, 1968, Peabody Coal Company (hereinafter referred to as "Peabody") was a corporation organized and existing under the laws of the State of Illinois, with its principal office and place of business located at 301 North Memorial Drive, St. Louis, Missouri. On or about March 29, 1968, Peabody changed its name to PDY Coal Company and transferred its business and certain assets to a wholly-owned subsidiary of Kennecott, also named Peabody Coal Company, which was organized under the laws of the State of Deleware. (Complaint and Answer, pars. 13, 28; CX 162 Z–16, Z–28–29.) Unless otherwise indicated, references to "Peabody" in these findings are intended to refer to the Illinois corporation.

Peabody was one of the two leading producers of coal in the United States. In 1966 it produced approximately 52.8 million tons of coal, or approximately 10 percent of the 530 million tons of coal produced domestically in that year. In addition, Peabody sold approximately 8.3 million tons of coal produced by others. (Complaint and Answer, par. 14.) In 1967 Peabody accounted for 59.4 million

tons of the coal industry's total production of 552.6 million tons. The other industry leader was Consolidation Coal Company, which produced 51.4 million tons in 1966 and 56.5 million tons in 1967. (CX 183; RX 170 A–C.)

In 1966, approximately 77 percent of Peabody's coal sales were made to electric utility companies. Peabody was the nation's leading supplier of coal to such companies. (Complaint and Answer, par. 15.)

Peabody operated approximately 37 wholly-owned domestic mines and had an interest in 6 additional domestic mines in the States of Alabama, Colorado, Illinois, Indiana, Kentucky, Missouri, Ohio, and Oklahoma, with additional operations planned for Arizona (Complaint and Answer, par. 16).

In 1966 approximately 84 percent of the coal mined by Peabody came from strip mines. The profitability of its strip mines was materially higher than that of its underground mines. (CX 162–R.)

As of mid-1967, Peabody owned, leased, or held under option more than 5.5 billion tons of proved recoverable coal reserves located in 14 States—Alabama, Arizona, Colorado, Illinois, Indiana, Kansas, Kentucky, Missouri, Montana, New Mexico, North Dakota, Ohio, Oklahoma, and Wyoming. All of its reserves were bituminous, except for the reserves in Montana and Wyoming (lignite and subbituminous), North Dakota (lignite), and Colorado (bituminous and lignite). These reserves are about equally divided between strip and underground. However, the reserves assigned to active mines comprises nearly 700 million tons of strip reserves and nearly 225 million tons of underground reserves. (Complaint and Answer, par. 16; CX 162 S–T.)

In addition, Peabody owned, leased, had under option, or otherwise controlled substantial acreage in the West which was known to contain large amounts of coal but which had not been fully explored or tested for mineability. (Complaint and Answer, par. 16; CX 162–T.)

On October 23, 1967, a consent judgment was entered by the United States District Court for the Northern District of Illinois requiring Peabody to divest as an operating business coal properties producing 6 million tons of coal a year and having the ability to continue to produce coal at that rate for 20 years. The judgment also precludes Peabody from acquiring any operating coal company or mine in Illinois or neighboring states for 10 years and limits its acquisition of reserves in the same area for 5 years. *United States* v. *Peabody Coal Company*, 1967 Trade Cas., ¶ 72,213 (N.D. Ill. 1967).

As of mid-1967, Peabody's principal domestic marketing areas were the North Central and South Central States. In addition, Peabody was aggressively expanding its marketing areas, with sizable, long-term contracts in the Southeast and Southwest. Peabody also had extensive reserves of coal in Western and Southwestern States that offered promising opportunities for substantial tonnages of new business. (Complaint and Answer, par. 17.) One contract provides for the delivery by Peabody of a minimum of 117 million tons of coal from the Black Mesa area of Arizona to a power station to be built at Davis Dam in Nevada, starting in 1970 and continuing for 35 years (CX 152 D–E, CX 162–R).

During 1966, Peabody and its subsidiaries had coal sales and other revenues of $233,923,483 that provided a net income of $26,279,973. Total consolidated assets of Peabody as of December 31, 1966, were $315,629,163. Peabody's rate of return on stockholders' investment during 1966 was 14.6 percent. (Complaint and Answer, par. 18; CX 162–O, W.) Among United States industrial corporations listed in "Fortune's 500" for 1966, Peabody ranked 186th in terms of assets and 317th in terms of sales (CX 188, p. 14).

At all times relevant to this proceeding, Peabody has sold and has shipped its products in interstate commerce and has been engaged in "commerce" within the meaning of the Clayton Act (Complaint and Answer, par. 20; CX 118, p. 8; CX 119, p. 8; CX 120, pp. 8–9; CX 121, p. 8).

In addition to its domestic operations, Peabody owned 58 percent of an Australian company that operated a large metallurgical (coking) coal mine in Australia. Most of its output was sold to the Japanese steel industry. (CX 162–U.)

III. The Acquisition

The first reference to the possible acquisition of Peabody by Kennecott was in the course of a conference that Frank R. Milliken, president of Kennecott, had on July 29, 1965, with C. D. Michaelson, vice president for mining, and C. H. Burgess, vice president for exploration, on the general subject of "Commodity Objectives of Exploration Department." [1] In a discussion of activities relating to coal, mention was made of the possible acquisition of coal companies as such rather than the purchase of reserves or the discovery of reserves, and Mr. Burgess expressed the view that the acquisition of coal companies would make for faster progress. On the subject of coal companies that might be purchased, Mr. Milliken mentioned

[1] Other aspects of this conference are considered *infra*, pp. 860–61.

Peabody and Island Creek, but not on any definitive basis. Instead, Mr. Milliken referred to the fact that Kennecott had engaged a consultant on coal in Utah and wondered whether it should employ a consultant to advise it on coal in the rest of the United States and elsewhere in the world. Mr. Burgess suggested that the Paul Weir Company, of Chicago, one of the nation's leading coal consulting firms be contacted for further advice (CX 81 A–C; Milliken 6362–63, 6402–04). Mr. Burgess had been acquainted with Clayton G. Ball, president of Paul Weir Company, for more than 30 years. Mr. Burgess visited with Mr. Ball in his Chicago office from time to time and had on occasion discussed coal in a casual manner. (Ball 4302–04, 4277–79.)

As far as the record shows, there was no followup on the suggestions made at the July meeting until the following spring. Kennecott's first dealing with Peabody regarding acquisition originated with a suggestion made to Mr. Burgess when he met in Chicago on March 17, 1966, with Mr. Ball and Paul Weir, chairman of the board of Paul Weir Company. Mr. Burgess indicated that Kennecott was interested in making a substantial diversification investment in coal. (CX 94 A–B; Ball 4303–04.) In the course of the conference [2] Mr. Weir mentioned that Peabody might be available for acquisition (P. Weir 4383–85).

Following the meeting of March 17, 1966, and pursuant to Mr. Burgess' suggestion, Paul Weir informed Merl C. Kelce, chairman and chief executive officer of Peabody, that Kennecott was interested in talking with him (Kelce 3688, CX 94–B. On April 19, 1966, Mr. Kelce and the former general counsel of Peabody, met with Mr. Burgess in New York to discuss the possible sale of the Peabody properties to Kennecott. This was the first time any Peabody representative had discussed with any Kennecott representative a possible sale of Peabody to Kennecott. (Kelce 3687–88; Mullins 3588.)

Peabody's management had already determined that it wished to sell the company's business and assets and had already engaged in negotiations with several other companies for that purpose. The two principal executives of Peabody were positive that Peabody would be sold; it was only a question of when and to whom. (Mullins 3588–98; Kelce 3672–82.)

A combination of business conditions and personal considerations led to the decision to sell Peabody. There was great concern at the time about competition from nuclear energy, as many utilities were ordering nuclear power plants. Peabody's two largest customers,

[2] This conference is treated in greater detail *infra*, pp. 865–67.

TVA and Commonwealth Edison Company of Chicago, which accounted for 15 million to 20 million tons of Peabody's coal sales of between 50 million and 60 million tons, had made substantial commitments and plans for nuclear-fueled plants at prices that compared very favorably with Peabody's prices for coal. At the same time there was also great concern about governmental regulation of air pollution to limit the sulphur content of coal to 1 percent, when the sulphur content of Peabody's coal ranged from 3.5 percent to 4 percent. This combination of business circumstances had a depressing effect upon the coal business. Peabody stock had fallen from a high of $46 in 1965 to the low $30's in early 1966 because of the threat of nuclear power and air pollution. In addition, for reasons of health and age, the Kelce brothers—whose family constituted Peabody's largest shareholder group—did not want to continue active management of the company. (Kelce 3674–76; CX 162–P.)

At the April 1966 meeting, the parties did not enter into any detailed negotiations. The meeting simply confirmed that Peabody was for sale, that it had had prior merger discussions with other companies, and that it would like to talk with Kennecott. After Mr. Burgess reported these facts to Mr. Milliken, active merger negotiations followed and eventually resulted in the agreement by Kennecott to acquire Peabody. (Milliken 6364.)

Agreement between the Kennecott and Peabody managements to seek approval of their respective boards of directors for the acquisition of Peabody's business by Kennecott was reached early in July 1966. On July 8, 1966, Kennecott's president wrote its directors, briefly outlining the proposed transaction and placing before them the question of whether Kennecott should proceed. (CX 153 A–B.)

Enclosed with the letter to the directors was a report on the proposed acquisition that discussed in considerable detail Kennecott's need for diversification directed toward (1) the long-term future of the company and (2) the short-term investment of existing cash and projected surplus cash flow, aggregating approximately $600 million. The report also discussed the present business and future prospects of Peabody and the coal industry generally. (CX 154 A–Z–7.)

On July 13, 1966, the Peabody acquisition proposal was considered by the executive committee of Kennecott's board (CX 156 A–B), and was given a general expression of approval by the board on July 15, 1966 (CX 157 A–C.)

On July 19, 1966, the president of Kennecott and the chairman and chief executive officer of Peabody executed an agreement in prin-

ciple for the acquisition of Peabody's assets by Kennecott at a price designed to yield $47.50 in cash for each share of Peabody common stock outstanding. The agreement recited that the parties should proceed to develop a definitive contract, that Kennecott should undertake an audit, investigation, and independent appraisal of Peabody, and that the agreement to be developed would be subject to the approval of the boards of directors of both companies and of the Peabody shareholders and would also be subject to the obtaining of satisfactory tax rulings and the working out of satisfactory financial arrangements. (CX 155.)

By March 17, 1967, Kennecott had received financial audit material from independent accountants and a preliminary evaluation of Peabody's mining properties and equipment from Paul Weir Company (CX 162 Z–4), and agreement was reached as of that date for the sale to a wholly-owned subsidiary of Kennecott of all Peabody's coal properties (subject to a reserved production payment in the primary amount of $400 million),[3] other assets (with certain exceptions), and business. (CX 162 Z–16, Z–28.) Kennecott's obligation to proceed was subject to, among other things, the execution of a satisfactory agreement for the purchase of the production payment, the receipt of the necessary tax rulings, and the final report of the Paul Weir Company (CX 162 Z–33–35).

Following the receipt of further reports from Paul Weir Company on November 15, 1967, and March 13, 1968 (CX 163, CX 164), the acquisition was finally consummated on March 29, 1968. On that date, Kennecott, through a subsidiary, acquired the business and substantially all the assets of Peabody for $285 million in cash and the assumption of certain liabilities (approximately $36.5 million), subject, however, to a production payment that was sold by Peabody to a third party (Green River Coal Company) for $300 million. The production payment provided in substance for the payment to the owner thereof of an amount equal to 95 percent[4] of the "net mine revenue" (as defined in the conveyance) from Peabody's mines until the owner has received $300 million plus an amount equal to 6.775 percent per annum on the unliquidated balance of the primary sum of $300 million, computed monthly. This meant that a substantial portion of Peabody's net revenues would be dedicated for about 10 years to the liquidation of the production payment; but after the

[3] Later reduced to $300 million. The production payment arrangement was a means of financing the transaction, in the nature of a loan that, together with the cash paid by Kennecott, yielded immediate cash to Peabody for paying certain indebtedness and for liquidation (CX 154 G–H; CX 166 A–Z–52; Weir 4365–68; 4376–79).

[4] In the initial months of operation of a mine, the percentage is lower.

retirement of the production payment, all earnings were to accrue to Kennecott. (Answer, par. 28; CX 9, p. 3; CX 154 G–H; CX 161, p. 13; CX 166 A–Z–52.)

IV. Line of Commerce

At the outset it is necessary to delineate the line of commerce to be considered in testing the competitive effects of the acquisition. Complaint counsel would limit the product line to bituminous and sub-bituminous coal (CPF–Br., pp. 7–9, 32), whereas, despite some initial vacillation (Tr. 123, 127–28, 132, 135), respondent urges (RB, p. 6) that the line of commerce should not be limited to coal but should encompass competing fuels in a market variously denominated as an "energy market" (for example, Netschert 3932–35) or a "boiler fuels" market (Fox 6069, 6237–40, 6245) or, perhaps, in view of the importance of such fuels in the generation of electric power, an electric utility market.[5] Respondent also takes the position that if coal is deemed to be the relevant product line, it should include lignite in addition to bituminous and subbituminous coal and should exclude from the bituminous category, metallurgical or coking coal, so as to recognize a "steam coal" market as distinguished from a coking coal market.[6] In any event, respondent says that in assessing the competitive impact of the challenged acquisition, consideration must be given to the competition that exists between coal and other fuels. (RB, p. 6.)

Despite their differences in approach, counsel are not really too far apart, and their positions may be accommodated in the view taken by the examiner. On the one hand, complaint counsel concede, as they must, the existence of inter-fuel competition, and possibly even an "energy market," at least in relation to the generation of electric power (CPF–Br., pp. 19–20), but they insist that coal is, in any event, a recognizable submarket of such a total energy market (CPF–Br., pp. 28, 32). On the other hand, respondent concedes, as it must, the existence of "an identifiable coal industry" (RRB–Ex. pp. 20a, 26a), which it tacitly recognizes as a submarket of the energy market, with much of its evidence actually predicated on coal as a line of commerce. Respondent does not specifically define the metes and bounds of any alternative line of commerce. Essentially,

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[5] Compare "Respondent's Preliminary Statement on the Relevance of Evidence Relating to Competition Between Coal and Other Fuels" with complaint counsel's response thereto.

[6] "Steam coal" is a shorthand term comprehending all bituminous coal, sub-bituminous coal, and lignite coal except bituminous coal of coking quality. See Section V, subsection C, *infra*, p. 771.

respondent simply contends that inter-fuel competition must be recognized in any realistic appraisal of the competitive effects of Kennecott's acquisition of Peabody.

Thus, although there is an economic basis for respondent's espousal of a total energy market or a boiler fuels market, the record establishes the existence of a distinct coal industry as a submarket of such a broader market. There is industry, Government, and public recognition of the coal industry as a separate economic entity; and coal has peculiar characteristics and uses, as well as specialized vendors and distinct customers.[7]

Moreover, coal as a line of commerce embraces the products of the acquired company, and coal is the line of commerce in which, according to the complaint, the removal of Kennecott as a potential competitor had its impact.

Although finding coal to be the relevant line of commerce, the examiner felt compelled, nevertheless, to consider the impact of inter-fuel competition, particularly in coal's major market—the electric utility market. The relevance of this competition was established by emphasis in the complaint on the utility industry as an increasingly important market for coal (Complaint, pars. 24, 27, 30(c), 30(f)); and complaint counsel not only acknowledge that the coal industry's major growth since 1954 has been due to its ability to meet the demands of electric utilities, but they also forecast a vast expansion of this market (CPF 31–32, 35). In addition, the record establishes that in 1966, 77 percent of Peabody's sales were made to electric utilities, making Peabody the nation's leading supplier of coal to such companies (CPF 11).

Factually, legally, and pragmatically, it is reasonable, therefore, to consider coal as the product market and at the same time to take into account the competition that other fuels offer to coal.

There remain for resolution two questions regarding the definition of coal as the product line—whether lignite should be included with bituminous and sub-bituminous and whether coking coal should be excluded from the bituminous category so as to segregate a coking coal market from a steam coal market.[8]

On the basis of the detailed findings that follow in Section V, subsection C (*infra*, p. 769), the examiner finds that for completeness, lignite should be included in the definition of coal as the prod-

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[7] *Brown Shoe Co.* v. *United States*, 370 U.S. 294, 325 (1962); *United States* v. *Bethlehem Steel Corp.*, 168 F. Supp. 576, 589–94 (S.D.N.Y. 1958).

[8] Both parties seem to be in agreement that for purposes of this case, anthracite may be excluded from consideration (*infra*, p. 769, fn. 10).

uct line in this case. It is not apparent to the examiner why complaint counsel insist on the exclusion of lignite from their definition of coal, unless it be the fact that its exclusion from certain statistics may show a somewhat higher degree of coal industry concentration than would exist if lignite were included. But complaint counsel concede—in fact, they insist on—the relative insignificance of lignite production in the overall totals of coal production (RPF–Br., p. 9), and they rely on statistics that include lignite, including two of the exhibits that they presented, through a Commission economist (CX 180 and CX 183). As a practical matter, inclusion or exclusion of lignite is not important, but the examiner is satisfied, on the basis of the record as a whole, that its inclusion is proper for the purposes of this case.

As to respondent's proposal to exclude coking coal from the bituminous category, the detailed findings in Section V, subsection C (*infra*, p. 769) demonstrate a valid basis for distinguishing between the market for coking coal and the market for steam coal—a distinction leading complaint counsel to view them as separate submarkets, even while opposing the exclusion of coking coal from consideration (CPF–Br., pp. 29–32).

Nevertheless, the examiner has considered it inappropriate in a case dealing with competition in the coal industry to exclude coking coal. It is true that a substantial amount of coking coal production is the captive production of steel companies and is used almost exclusively for steel-making purposes, but coking coal is also produced by independent coal companies, and its production and sale constitute a part of the coal industry.[9] Although there is testimony that Peabody produced no coking coal in the United States (Mullins 3606), there is also an indication of Peabody's ownership of coking coal reserves with at least some limited production (Lee 1705–06), and it has already been noted that Peabody is a substantial producer of coking coal in Australia (*Supra*, p. 758). Moreover, the record establishes that the interest of Kennecott management in coal embraced coking coal as well as steam coal (CX 14). The determination not to exclude coking coal from the definition of coal does not, however, preclude exclusion from certain tabulations for purposes of analysis—compare, for example, RX 147 A–B and RX 148; Netschert 3925–26).

On consideration of the facts of record and the arguments of

[9] It is worth noting that Bureau of Mines coal production statistics do not treat coking coal separately, but its specialized use does appear, of course, in consumption statistics (Netschert 4206).

counsel, therefore, the examiner finds and concludes that the appropriate line of commerce (the product line) is coal, consisting of bituminous, sub-bituminous, and lignite, but that for purposes of analysis it is necessary to take into account the competition that exists between coal and other fuels.

Moreover, although metallurgical or coking coal is included in some of the industry statistics, it must be recognized that, generally speaking, this case is primarily concerned with "steam coal" rather than with coking coal and that coking coal and steam coal are not competitive products. Just as other fuels may be considered in analyzing the state of competition in the coal industry, so may coking coal be excluded for the purpose of analyzing competitive factors in the coal industry.

V. The Coal Industry—Its Recent History, Its Structure, and Its Relationship to Other Fuels

A. INTRODUCTION

As set forth in Section II (*supra*, p. 756), Peabody Coal Company was engaged in the production and sale of coal, and it is in this line of commerce that, according to the complaint, Kennecott's acquisition of Peabody created the probability of a substantial lessening of competition in violation of Section 7 of the Clayton Act, as amended. Accordingly, the examiner having found (Section IV, *supra*, p. 762) that coal is the relevant line of commerce in which to test the legality of the acquisition, it is necessary to examine the coal industry in some depth—its history, its structure, its principal markets, and its probable future, as well as the nature of competition, including the competition of other fuels.

B. PRINCIPAL WITNESSES ON COAL

Testimony and exhibits covering these subjects were presented by some three dozen witnesses, most of them called by respondent. The principal witnesses testifying on various aspects of the coal industry are listed below.

1. *Officers of Peabody*

The following officers of Peabody Coal Company testified about the nature of the coal business in the United States:

Merl C. Kelce, former chief executive officer (Tr. 3654A, 3665, 3672);
Thomas C. Mullins, president and chief executive officer (Tr. 3544);
Edwin R. Phelps, senior vice president, operations (Tr. 3329);

Hugh B. Lee, Jr., vice president and general sales manager (Tr. 1509);
Richard E. Miller, senior vice president, sales (Tr. 3851); and
Arthur S. Macke, vice president, underground operations (Tr. 3725–26).

2. *Other Coal Industry Executives*

Other coal industry executives who testified about the business were:

Stuart Colnon, chairman of the board, Zeigler Coal & Coke Company (Tr. 5214);
Allen D. Christensen, former president, Utah Construction Company (now Utah Construction & Mining Co.) (Tr. 5159–60);
Albert L. Reeves, senior vice president, secretary, and director, Utah Construction & Mining Co. (Tr. 1201–02);
A. G. Gossard, general manager of coal operations, Kerr-McGee Corporation (Tr. 5879); and
Ralph B. Harry, assistant treasurer, National Coal Association (Tr. 579).

3. *Coal Consultants*

Six men who were consultants to coal companies and other companies interested in the coal business also testified:

Paul Weir, chairman of the board, Paul Weir Company (Tr. 4383);
Dr. Clayton G. Ball, president, Paul Weir Company (Tr. 4277–78);
John P. Weir, executive vice president, Paul Weir Company (Tr. 4336);
Neil Robinson, president, Robinson & Robinson (Tr. 4390–91);
Claude P. Heiner, president, C. P. Heiner & Company, Inc., (Tr. 2307, 2318); and
Earl R. McMillan (Tr. 933).

4. *Public Utility Executives*

Philip Sporn, former president of American Electric Power Company, testified as an expert witness about competition in the sale of coal and other fuels to electric utilities and about the development of commercial nuclear energy. Mr. Sporn began his employment with the American Electric Power Company in 1920; he became vice president and chief engineer in 1934 and president in 1947. During the time that Mr. Sporn was president of American Electric Power, it became the nation's largest privately owned electric utility in terms of electricity generated, and it achieved the lowest costs of any electric utility system in the country. American Electric Power owns about 650 million tons of coal reserves, and mines about 25 percent of its own requirements of coal. Its coal mining operations were built up under Mr. Sporn's active supervision.

From 1952 to 1967, Mr. Sporn was also chief executive officer of Ohio Valley Electric Corporation, a company formed at the request of the Atomic Energy Commission to supply all the power requirements of a new diffusion plant, and in that capacity, it negotiated

and supervised the handling of a coal supply contract for over 115 million tons then the largest contract in the history of the coal business.

Mr. Sporn retired as president of American Electric Power in 1961, but continued to serve as chairman of the company's system development committee until 1967. He has held various government and private positions, relating to the development of nuclear energy, and he was chairman of the executive advisory committee for the Federal Power Commission's National Power Survey 1962-1964. The value of Mr. Sporn's work in the field of nuclear energy and in energy generally was publicly recognized by the Joint Committee on Atomic Energy, of the Congress of the United States in February 1968, when a series of analyses prepared for the Committee by Mr. Sporn were published as a report of the Joint Committee entitled *Nuclear Power Economics*—1962 *through* 1967 (Sporn 4481, 4483–4506; RX 187 A–C). Mr. Sporn is one of the nation's leading authorities on energy and the electric utility industry.

In addition, the following executives of investor-owned public utility companies testified as to fuel purchasing and various other aspects of the electric utility business:

Gordon R. Corey, chairman of the finance committee and director, Commonwealth Edison Company (Tr. 4704–05);

Don C. Frisbee, president, Pacific Power & Light Company (Tr. 5234–35);

Elwood F. McGuire, manager of plant engineering, Minnesota Power & Light Company (Tr. 4580–82);

Robert P. O'Brien, vice president, Southern California Edison Company (Tr. 5269);

James H. Zornes, production manager, Nevada Power Company (Tr. 4741);

E. M. Naughton, chairman of the board, Utah Power & Light Co. (Tr. 3201);

E. Allan Hunter, president and general manager, Utah Power & Light Co. (Tr. 2937); and

Paul Blanchard. retired vice president, Utah Power & Light Co. (Tr. 3182).

5. *U.S. Government Officials*

Ernest B. Tremmel, director since 1961 of the Division of Industrial Participation, United States Atomic Energy Commission, testified on the development and competitive position of commercial nuclear energy. Mr. Tremmel has been active in the United States atomic energy program since 1943, when he joined the Manhattan Engineer District. (Tremmel 5099–5103; RX 215 A–B.) Also,

Joe D. Turner, chief of the Branch of Mining Operations, United States Department of the Interior, who testified regarding federally-owned coal lands (Tr. 871–72);

Leslie J. Bishop of the Bureau of Reclamation, United States Department of the Interior, who testified regarding water resources (Tr. 644); and

G. Edward Larson, chief of the Division of Contracts and Administration, Office of Coal Research, United States Department of the Interior (Tr. 5736), who testified concerning research and development work being done on the conversion of coal to synthetic fuels.

6. *Utah Coal Industry Witnesses*

Testifying as expert economic witnesses on the coal business in Utah were:

Dr. ElRoy Nelson, vice president and economist, First Security Corporation, a bank holding company in Salt Lake City, Utah (Tr. 2150–57), and

Frank C. Hachman, an economist on the faculty of the University of Utah and senior author of an extensive study on Utah coal and its future prospects made for the Utah State Planning Coordinator (Tr. 3094–95, 3104–05).

Others who testified concerning the coal business in Utah and related subjects were:

Paul L. Shields, who was a consultant for Kennecott (Tr. 1335–36);

John Peperakis, manager of Kaiser Steel Corporation's Sunnyside Coal Mines (Tr. 2783–84);

Robert M. Von Storch, general superintendent of Western District Coal, United States Steel Corporation (Tr. 2978), and

Shirl C. McArthur, manager of the Deseret Coal Mine of the Latter Day Saints Church, president of Castle Valley Mining Co., and mayor of Huntington, Utah (Tr. 2693).

7. *Witnesses on Economics and Marketing*

Dr. Bruce C. Netschert, director of the Washington office of National Economic Research Associates, Inc., testified as an expert witness on changes in the coal business and the general competition among energy resources. Dr. Netschert has a bachelor's degree in geology and a doctorate in economics from Cornell University. He has been involved in natural resource economics for his entire professional life commencing in 1949, and has concentrated in the area of energy resources since 1955. During his career he has been employed by several government agencies, including the Bureau of Mines, the President's Materials Policy Commission, the Office of Defense Mobilization, and the Central Inteligence Agency. From 1955 to

1961, he was associated with Resources for the Future, Inc., conducting research on the future supply of energy resources. Since 1961 he has been with National Economic Research Associates, Inc., working in the field of energy economics. He has written extensively for professional journals on energy, including coal, and in 1960 he published (with S. H. Schurr) *Energy in the American Economy*, 1850–1975. (Netschert 3920–22; RX 181 A–E).

Dr. Bertrand Fox, professor at the Harvard Graduate School of Business Administration since 1949, testified as an economic expert, analyzing on the basis of the record the nature of competition in the sale of coal and other fuels and the competitive consequences of Kennecott's acquisition of Peabody. Dr. Fox holds a bachelor's degree from Northwestern University and a master's degree and doctorate in economics from Harvard University. He has taught economics and related courses in business administration since 1931, except for a period of service in various United States Government agencies from 1940 through 1945. He has since been a consultant to several federal government agencies and is a member of the Office of Emergency Preparedness. Dr. Fox has advised counsel for defendants in various antitrust actions and has also served as a consultant to the Assistant Attorney General in charge of the Antitrust Division of the Department of Justice. (RX 231 A–B; Fox 6049.)

James M. Folsom, a Federal Trade Commission economist, identified statistical exhibits he had prepared and testified regarding the coal industry but not as an expert on coal marketing (Tr. 617, 766–67).

C. TYPES OF COAL

Coal is a mineral that occurs in nature. On the basis of certain physical characteristics, including age, volatility, carbon content, and heat content expressed in British Thermal Units ("BTU"), coal is generally classified by rank as anthracite,[10] bituminous, sub-bituminous, and lignite. For the higher ranks from meta-anthracite to low volatile bituminous, the basis of classification is the ratio of volatiles to fixed carbon; for the lower ranks from lignite to high volatile bituminous, the basis is BTU content—that is, heat or calorific content. (Netschert 3923–24.)

All witnesses and other sources agree that lignite ranges downward

[10] Anthracite is commonly regarded as an energy resource distinct from other coal. About 12 million tons of anthracite were produced in the United States in 1967, all in Pennsylvania. (Netschert 3924, 4106–07.) For all practical purposes, both parties agree that this case is not concerned with anthracite (CPF 23; CPF–Br., p. 9; RPF 98; but see CPF–Br., pp. 7–9; compare RRB–Ex., pp. 7a–8a).

from 8,000 BTU per pound, but the record does not clearly delineate the line of demarcation between sub-bituminous and bituminous. At any rate, sub-bituminous ranges upward from 8,000 BTU, and bituminous, beginning perhaps at 10,000 BTU or 13,000 BTU, has a BTU content of up to 14,000 BTU or 15,000 BTU per pound. (CX 195; Folsom 765–68; Turner 895; Netschert 4138; compare RPF 97, CPF 24.

Although complaint counsel would exclude lignite from the definition of coal (Complaint, par. 1; CPF–Br., pp. 7–9; CPF 24–25) even while recognizing it as a category of coal (CPF 22), the examiner finds that lignite is properly included in any definition of coal for the purposes of this case.

The physical characteristics of bituminous, sub-bituminous, and lignite vary somewhat, but the distinctions are of degree and chiefly technical, and these coals have the same principal uses (McGuire 4642–43; Turner 895–96; Netschert 3923, 4109–10, 4135–37; Folsom 765–69). The Bureau of Mines generally reports industry statistics for bituminous, and lignite on a combined basis (for example, RX 147 A–B), although in some instances the lignite figures are broken out separately (Folsom 871).

Production of bituminous, sub-bituminous, and lignite in the United States in 1967 totaled 553 million tons (RX 173), of which about 3½ million tons were lignite (Netschert 4107).

Lignite is produced in the States of North Dakota, South Dakota, and Montana, and small lignite beds exist in Texas (CPF 25). Thus, complaint counsel are in error in arguing that no lignite exists in the Mountain Region (CPF–Br., p. 9) since Montana is within the Mountain Region as defined by complaint counsel (Complaint, par. 1(b); CPF–Br., subpar. (a), p. 107, subpar. (g) (2), p. 124).

As the youngest category of coal, lignite has the lowest BTU content and a generally higher moisture and ash content (Folsom 768; Turner 895–96). Its low BTU content and its tendency to spontaneous combustion militate against the long-distance transportation of lignite (Folsom 768–69); Netschert 4117; McGuire 4642). Although there is evidence that lignite has suffered from other competitive disadvantages in specific transactions (CPF 25), the record does not support the generalizations proposed by complaint counsel to the effect that lignite does not offer substantial competition to subbituminous or bituminous. (Compare CPF 25 with the exceptions thereto, RRB-Ex, pp. 10a–11a.)

Tremendous reserves of lignite exist in the West (Robinson 4397), including reserves held by Peabody (CX 162–T). Two of the leading

producers of bituminous and sub-bituminous coal also produce lignite—Continental Oil (Consolidation Coal) and North American Coal (RX 170; Folsom 633; McGuire 4605)—and both Peabody and United States Steel Corporation have attempted to sell lignite in competition with bituminous and sub-bituminous coal as well as with nuclear energy (McGuire 4605–08).

If the boundaries of the relevant market must comprehend the products of the merging companies (CPF–Br. pp. 23–27), lignite should be included in view of Peabody's ownership of lignite reserves and its efforts to sell lignite.

All coal except coking coal is used for the single purpose of combustion to produce heat. Coking coal, also called metallurgical coal, is exceptional in that it performs a chemical and physical function as well (Netschert 3923) and is used principally in the manufacture of steel (Folsom 758–59, 786; Peperakis 2802; Von Storch 2979, 2985; Netschert 3925–26).

Coking coal is bituminous coal with a relatively high BTU level (12,000 BTU to 14,000 BTU) and with a quality identified as a proper "free swelling index" (Turner 895–99).

In the manufacture of steel, coking coal is placed in coke ovens where it is burned in the absence of oxygen. It gives off violate matter and leaves a residue of almost pure carbon. The volatile material is recovered and used for by-products. The pure carbon is charged into a blast furnace with iron ore, dolomite, and limestone, and as it burns, it drives off the oxygen and various other matter from the iron ore and results in a pig iron which is used in the manufacture of steel (Nelson 2182; Von Storch 2985; Peperakis 2802).

To differentiate coking coal, with its specialized use, from coal used for the production of heat for any purpose, respondent has used the term "steam coal" (Netschert 3925–26, 4105–06; RB, p. 26, n. 9), and this usage has also been adopted by the examiner where appropriate, although it is not a category of coal recognized in Bureau of Mines production statistics. "Steam coal," as used herein, is a shorthand term for noncoking coal—that is, coal used for combustion or heat content—and it is not intended to mean that such coal is restricted to electric utility use or to other uses where steam is actually produced.

Steam coal cannot be used to make coke (Folsom 759, 786; Nelson 2194; Peperakis 2803; Von Storch 2985; Mullins 3606-07; Christensen 5199), but a small amount of steam coal may be used for mixing with coking coal to reduce high volatility (Nelson 2194; Peperakis 2804). Coking coal cannot readily be used as a substitute for steam

coal because it does not maintain heat, it clogs the grate with coke, and it is too expensive (Nelson 2194; Peperakis 2803–04; Von Storch 2985–86; Hachman 3114; Mullins 3606–07; Netschert 4104; Christensen 5199–5200; but see McMillan 975–76, 1024–30).

Coking coal commands a substantially higher price than steam coal (Folsom 758, 775; McMillan 978–79, 1030–31; Reeves 1283; Nelson 2193; Mullins 3607; but see Folsom 803).

Because of differences in chemical constituents, in quality, in end use, and in price, coking coal and steam coal are not competitive products and are considered to be in separate product markets (Folsom 759–60, 775, 783–84; Reeves 1285; Nelson 2194; Von Storch 2985; Hachman 3114; Mullins 3606–07; Netschert 3925–26; Christensen 5199–5200; Gossard 5913; Fox 6060–61, but see McMillan 1027).

However, the examiner finds no basis for totally excluding coking coal from consideration, even though the distinction between coking coal and steam coal may be recognized for purposes of economic analysis. The inclusion of coking coal as part of the line of commerce herein is supported by reasons that are substantially similar to those stated in the examiner's determination to include lignite in the product market (see *supra*, pp. 763–64).

D. COAL IN THE POST-WAR PERIOD (1947–1967)

1. *Changes in Coal-Consumption Patterns*

In the years immediately following World War II, coal was the single most important energy resource consumed in the United States. In 1947 coal accounted for 43.5 percent of total domestic consumption of energy resources, in comparison with the 33.7 percent accounted for by oil and 15. percent accounted for by natural gas. The relative position of coal among the energy resources declined almost constantly from 1947 through 1958, when coal accounted for 23.1 percent of total consumption. During the period 1959 through 1967, coal's position held steady at about 21 percent to 22 percent. Oil supplanted coal as the leading energy source in 1950, and natural gas was firmly established in second place in 1957. In the 1960's both oil and natural gas have been significantly more important in the total picture of energy resources consumption in the United States than coal, with oil accounting for 39.3 percent and gas for 34.7 percent of the total consumption in 1967, compared to 21.4 percent for coal. (RX 149; Netschert 3933–35.)

Domestic coal consumption in 1966 and 1967 was less than in 1947 and 1948 (R–147 A–B), even though the total consumption of energy

resources in the United States economy had increased by about 66 percent in the intervening years (Netschert 3934). Coal consumption declined irregularly from 546 million tons in 1947 to a range of 413 million to 432 million tons in the period 1952 through 1957 (with the exception of the year 1954, when consumption dropped to a low of 363 million tons), and to a range of 366 million to 388 million tons in the period 1958 through 1962. Consumption then rose constantly from 388 millions tons in 1962 to 486 million tons in 1966, and declined only slightly to 480 million tons in 1967. Coal consumption in 1966 and 1967 was greater than at any time since 1948. (RX 147 A–B.)

The consumption of coking coal, which is directly related to the production of steel, was about 20 percent of total consumption from 1947 through 1949; ranged between 23 percent and 26 percent of total consumption from 1950 through 1957; and was about 20 percent of total consumption throughout the decade 1958 through 1967. While the demand for coking coal has not shown any marked decline, neither has it shown any long-term growth—relative or absolute. (RX 147 A–B.)

There have been fundamental changes in the patterns of consumption of steam coal,[11] with one major source of traditional demand disappearing entirely, another dwindling to insignificance, and a third increasing steadily to over three times its former level (RX 148; Fox 6062–69). The details may be summarized as follows:

(a) In 1947, the use of coal by the railroads accounted for 109 million tons, or 25 percent of total steam coal consumption of 441 million tons. Railroad demand for coal declined steadily as steam locomotives were replaced by diesels so that by 1960 the railroads consumed only 2 million tons, or less than 1 percent of total domestic steam coal consumption of 299 million tons in that year. As a result, the Bureau of Mines discontinued collecting data as to railroad consumption of coal after 1960. (RX 148; Netschert 3928.)

(b) At the same time, the use of coal by retail and miscellaneous consumers also fell steadily from a level of 100 millions tons, or 23 percent of total steam coal consumption, in 1947, to 18 million tons, or less than 5 percent of total steam coal consumption, in 1967 (RX 148). The decline in the consumption of coal in this category was due to the displacement of coal by oil and by natural gas—especially the latter in recent years—as fuel for heating residences and small commercial establishments. (Netschert 3928–29, 3935; Nelson 2168–69; Fox 6064–65.)

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[11] See *supra*, p. 771.

(c) Consumption of steam coal by industrial users (including steel mills (for noncoking use), cement mills, and other manufacturing and mining industries) declined from 146 million tons in 1947 to 133 million tons in 1948; generally ranged between 103 million tons and 115 million tons over the next nine years (1949–1957);[12] declined further to a range of 89 million to 97 million tons in the succeeding five years (1958–1962), and rose to a slightly higher level in the years 1963 through 1967, when it ranged between 99 million tons and 106 million tons. In percentage terms industrial consumption held steady between 32 percent and 36 percent of total steam coal consumption in the years 1947 through 1958 and thereafter declined gradually to a level of 25 percent in 1967. (RX 148.)

Thus, during the period of the greatest industrial growth in the history of the United States, industrial use of coal first declined measurably and then remained relatively level.[13] This failure of the coal industry to expand its sales to industry during this period, despite great increases in industrial demand for energy, is also due to the increased competitive success of the oil and natural gas industries. (Netschert 3931; Fox 6066–67; Heiner 2603, 2626.)

(d) The only section of the economy that has increased its consumption of coal in the postwar years has been the electric utility industry, which today represents the only substantial and growing source of business for the coal industry (Netschert 3930; Fox 6068). Coal consumption by electric utilities has risen from 86 million tons, or 20 percent of total steam coal consumption, in 1947, to 272 million tons, or 70 percent of total steam coal consumption, in 1967 (RX 148.)

The United States coal industry has been able to survive as a significant part of the nation's economy only by reason of steadily increasing its sales to electric utilities (Netschert 3931; Gossard 5922; Fox 6063–68; see also Nelson 2265–66; Mullins 3552; Kelce 3683; J. P. Weir 4339–40).[14]

Even in the competition for the fuel demands of electric utilities, coal has suffered a loss of position relative to other fuels. In 1947 and 1948 coal (here including anthracite) supplied slightly more than 75 percent of this demand; in 1949–1960 between 65 percent and 70 percent; and since 1960 almost constantly 65 percent. Oil increased its

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[12] With the exception of a low of 92 million tons in 1954 and a high of 123 million tons in 1951.

[13] Consumption by cement mills has been relatively static, accounting for between 2 and 3 percent of total consumption during the entire period (RX 148; Netschert 3931, 4129, 4141; Fox 6067).

[14] The complaint (par. 24) recognizes the increasing importance of electric power utility companies; see also CX 180, CPF 31.

position at coal's expense during the early part of the period (1947–1953), reaching a high of 14 percent in 1949 and 1950, but it has held steady between 7 percent and 9 percent since 1954. Natural gas steadily increased its position from 13 percent in 1947 to 26 percent in 1959, and thereafter has held steady at a level of 26 percent to 28 percent. (RX 150; Netschert 3940–42.)

Nuclear energy, which was first used in a privately financed generating plant in 1960 (RX 203, p. 11), supplied none of the demand in the earlier years and 0.6 percent in 1966 (RX 189). Hydropower, a nonfuel energy source, which is also used to generate electricity, accounted for about 18 percent of electric generation in 1960, and 14 percent in 1966 (RX 189).

2. *Changes in Production, Transportation, and Marketing Techniques*

The extent to which the coal industry has succeeded in selling coal to electric utilities is attributable to the fact that it has been able to offer lower fuel costs. Significant commercial and technological innovations in production, transportation, and marketing have enabled the coal industry, despite constantly and sharply rising wage rates, to stabilize and even to reduce the cost of coal to substantial consumers, particularly the electric utilities. Among the important advances have been the development of more efficient mining methods and larger mining equipment; the increased utilization of lower-cost strip mining; the use of the unit train; the increased use of lower-cost water transportation; the transmission of electricity from mine-mouth plants by extra high voltage lines; and the assembling of substantial blocks of reserves able to supply the very large quantities of coal required by a modern generating plant over an extended period of time. (See Netschert 3997–4038; RX 159 A–B, RX 165, RX 191; Sporn 4547–48, 4572–75.)

a. *Mining Techniques*

There are two principal methods of mining coal, underground mining and strip mining. In recent years, a third method of mining, auger mining, has been developed, but it is relatively specialized, accounting for only 3 percent of total production in 1967. Historically, underground mining has been by far the most important method of coal mining, but strip mining has increased considerably in importance in recent years. (RX 159 A–B.)

For most of the nineteenth century, underground coal mining was a manual process, involving drilling, placement of explosives, blast-

ing, and the moving of the shattered coal into mine cars hauled by mules. However, by the end of the nineteenth century, mechanization of underground coal mining had begun. The change to mechanized mining was given great impetus by John L. Lewis' unionization of the industry during the depression of the 1930's with a resulting increase in wages. Consequently, productivity, in terms of output per man-day, has increased at a more rapid rate than wages. (Netschert 3994–95, 4008–09; RX 161 A–B.)

Productivity in underground mines has almost tripled, from about 5 tons per man-day in 1947 to about 15 tons per man-day in 1967, and productivity in strip mines has more than doubled from about 15 tons per man-day to 35 tons per man-day over the same period. The percentage of total production accounted for by the more highly productive strip mines increased from 22 percent in 1947 to 34 percent in 1967. As a consequence, the average productivity for the industry has increased from about 6 tons to over 19 tons per man-day, or has more than tripled from 1947 to 1967. (RX 159 A–B, RX 160; Netschert 4004–07; see RX 191; Sporn 4547–48.)

In 1947, 90 percent of the coal mined underground in the United States was mechanically cut before blasting and 60 percent was mechanically loaded (Netschert 3996; RX 158 A–B).

An important new technique in underground mining was the use of the continuous miner, a machine that was introduced in 1948. The continuous miner method replaced the sequential method of cutting, drilling, blasting, and loading, with one continuous operation of removing the coal from the mine face and loading it onto cars. Another post-war innovation in underground mining has been the introduction of self-propelled shuttle cars and conveyor belts that have a higher haulage capacity and enable full advantage to be taken of the high output of continuous miners. The technique of roof bolting was developed to meet the need for wider entries for larger equipment. (Netschert 3997–98.)

By 1967 over 95 percent of all coal mined underground in the United States was mechanically loaded and either mechanically cut or mined by continuous miner machines. About half of the coal mined underground was mined by continuous miner machines (RX 158 A–B).

In strip mining, the average thickness of the overburden being stripped has increased from 39 feet in 1950 to 50 feet in 1965, and the maximum overburden thickness for stripping has risen from 50 feet to about 120 feet. The average ratio, in terms of the number of

cubic yards of overburden moved for each ton of coal mined, had risen from 10.7 to 12.8 as a result of using larger equipment. The size of equipment used in strip mining has increased greatly, with the capacity of buckets for large shovels and draglines growing from 50 to 180 cubic yards or more, even up to 220 cubic yards. (Netschert 4000–01.)

Because of the substantial increases in productivity, the price of coal at the mine was not substantially higher in 1967 than in 1947; and it was lower than during the years 1957 to 1959 despite the continued increase in hourly wages. In contrast, the Wholesale Price Index increased by 41 percent between 1947 and 1967 and by 6 percent between the base period 1957–1959 and 1967. Allowing for inflation, the price of coal at the mine-mouth today is actually less than it was at the beginning of the post-war period. (Netschert 4008–12; RX 161 A–B.)

b. *Development in Transportation*

In the transportation of coal, three important developments have enabled substantial cost savings to be made:

(1) The employment of the unit train ("integral train") concept, whereby coal-hauling cars are permanently organized into a train that shuttles between the mine and the point of consumption, avoiding costly handling and delays in freight classification yards (see CX 118, pp. 6–7);

(2) The increased utilization of low-cost barge transportation, as the Eastern waterways have been improved over the last twenty years (see CX 119, pp. 1, 9–10); and

(3) The use of extra high voltage transmission lines to transmit electricity from generating plants located at or near the mine, thereby reducing or eliminating coal transportation costs as such. (Phelps 3426–27, 3439–40; Netschert 4021–27, 4029–34, 4037–38.)

These developments in transportation have enabled significant reductions to be made in the delivered price of coal. In many instances, they have also expanded substantially the areas to which coal may be economically supplied from a particular reserve. (Fox 6074–75.) The use of low-cost water transportation where it is available has, for example, enabled coal mined in western Kentucky to be sold in the Gulf States, including Florida (Mullins 3608–09). The unit train has provided reductions of 25 percent or more from normal rail rates and, for example, has made Montana coal available in northern Minnesota. In fact, the advantages of the unit train are so great that in 1967

more than one-third of all rail shipments of coal were on unit trains. (Netschert 4026; Lee 1606–08.)

The significance of extra high voltage transmission is demonstrated by the fact that in the period 1965–1969 alone, 26 large mine-mouth power plants, averaging 600 megawatts in capacity, were constructed (Netschert 4031–32). With about 3,000 tons of coal required per year per megawatt of capacity (Lee 1581, 1599; Mullins 3571), these plants, with total capacity of 15,000 megawatts, use in the aggregate, at normal loads, about 45 million tons of coal per year, an amount equal to about 17 percent of all coal consumed by electric utilities in 1967 (RX 148).

Another development that may provide substantial transportation cost reductions in particular situations is the slurry pipeline. The only coal pipeline that has been used so far, was operated over 100 miles in Ohio in 1957. It was so successful that rail rates were reduced to such a low level that the pipeline was put out of business. A pipeline is now being constructed for transportation of coal over 275 miles from Black Mesa, Arizona, to Mojave, Nevada. While the slurry pipeline has not been utilized to the same extent as other cheap modes of transportation, its development as a competitive threat has provided important bargaining power to the coal companies in their negotiations for lower rail rates. (Lee 1584; Netschert 4027–28; O'Brien 5296, 5308.)

The combination of reductions in production costs and transportation charges has contributed to significant reductions in delivered cost in the last decade (RX 165).

c. *Illustrative Projects*

Projects such as Four Corners, Black Mesa, and Colstrip—all low-cost strip mining operations—illustrate the success of the coal industry in producing low-cost fuel for electric utilities.

The Four Corners mine in New Mexico will be producing in 1970 at an annual rate of 8.5 million tons, all to be consumed by a giant 3,200-megawatt power plant, located near the mine, that will be supplying electricity to meet demands for power as far away as Los Angeles by the modern technology of extra high voltage transmission. The cost of power delivered in Los Angeles will be competitive with that generated nearer the load center by nuclear or natural gas generating facilities. (RX; O'Brien 5282–83, 5314; Reeves 1212–13, 1215–16.)

The Black Mesa mine in Arizona, by 1972, will supply 5 million tons of coal annually, to be delivered through a 280-mile slurry pipe-

line to a 1,500-megawatt generating plant located at Davis Dam in Nevada, but serving power needs as far distant as Los Angeles (Lee 1580–82).

Peabody's Big Sky mine at Colstrip, Montana, will supply 2 million tons a year to Minnesota Power & Light upon completion of its new generating plant at Cohasset, Minnesota, with delivery being made by an 850-mile (1700-mile round trip) unit-train haul, the longest yet employed. Peabody's Colstrip coal was selected as the fuel for the Cohasset plant after close competition with nuclear energy as well as coal from other sources. It will provide a reduction in fuel costs on the order of 40 percent for Minnesota Power & Light. (McGuire 4634–35, 4646; McMillan 961; Lee 1540–41, 1543–44.)

d. *Scale of Mining Operations*

Increased mechanization and the employment of larger and more productive equipment have been accompanied by an increase in the scale of mining operations. The following table, which combines RX 167 and the odd-numbered columns of RX 166, sets forth for the years 1947 through 1967 the number of mines in each of 6 size categories and the production of each category, in tonnage figures and as a percentage of total production.

The number of mines producing 500,000 tons of coal a year or more declined from 303 in 1947 to 164 in 1949, fluctuated widely between 190 and 264 in the years 1950 through 1960, and rose steadily from 195 in 1961 to 281 in 1967. The number of mines producing between 100,000 tons and 500,000 tons a year declined markedly from about 1,100 in 1947 to a level of about 500 in the years 1959 through 1965 but rose to 600 in 1967. Most of this recent increase is in the number of mines that produce between 100,000 and 200,000 tons a year. Mines producing less than 10,000 tons a year have shown a marked decline over the past 4 or 5 years, from a level of 4,400 in 1962–1963 to about 2,400 in 1967. (RX 166; Netschert 4041–44.)

In 1947 coal mines producing 500,000 tons or more accounted for almost 42 percent of total production. Their portion of total production declined to 29 percent in 1949, but thereafter there was a gradual and fairly constant rise to a level of 59 percent in 1967. There has been, in contrast, a substantial decrease over the long term in the percentage of total production accounted for by mines that produce between 100,000 and 500,000 tons a year. Such mines accounted for about 39 percent of total production in 1947, rose to 43 percent in 1949, but declined to only 23 percent in 1967. After 1953, virtually all of this decline occurred in mines that produced between 200,000

U.S. Coal Production; Number of Mines in Each Size Category, Tonnage and Percentage of Total Production, 1947–67

[Million tons]

Year	500,000 tons and over			200,000–500,000 tons			100,000–200,000 tons			50,000–100,000 tons			10,000–50,000 tons			Less than 10,000 tons			Total number of mines	Total production
	Number of mines	Production	Percent of total	Number of mines	Production	Percent of total	Number of mines	Production	Percent of total	Number of mines	Production	Percent of total	Number of mines	Production	Percent of total	Number of mines	Production	Percent of total		
1947	303	262	41.5	498	155	24.6	618	88	14.0	704	50	8.0	2,665	60	9.4	3,912	16	2.5	8,700	631
1948	265	228	38.0	490	154	25.6	580	83	13.8	768	55	9.1	2,697	61	10.2	4,279	20	3.3	9,079	600
1949	164	128	29.3	383	120	27.3	497	70	16.1	666	48	10.9	2,148	50	11.4	4,701	22	5.0	8,559	438
1950	218	185	35.9	456	140	27.1	514	72	14.0	622	44	8.6	2,367	53	10.2	5,262	22	4.2	9,429	516
1951	264	226	42.4	434	136	26.4	464	65	12.2	604	43	8.0	2,046	47	8.8	4,197	17	3.2	8,009	534
1952	231	189	40.5	386	122	26.2	425	60	12.9	532	38	8.1	1,820	42	9.0	3,881	15	3.3	7,275	467
1953	226	203	44.4	308	121	26.4	358	50	10.9	484	33	7.2	1,629	36	8.0	3,576	14	3.1	6,671	457
1954	190	173	44.1	300	99	25.3	290	41	10.5	410	29	7.5	1,612	36	9.1	3,328	14	3.5	6,130	392
1955	227	220	47.4	320	105	22.5	331	47	10.1	471	33	7.2	1,908	40	8.7	4,599	19	4.1	7,856	465
1956	246	243	48.6	323	104	20.8	365	51	10.2	488	34	6.8	2,112	46	9.3	4,986	21	4.3	8,520	501
1957	245	239	48.5	303	105	21.3	311	45	9.0	406	33	6.7	2,398	52	10.5	4,821	20	4.0	8,539	493
1958	200	186	45.8	265	87	21.1	295	42	10.1	408	28	6.9	2,169	47	11.4	4,927	19	4.7	8,264	410
1959	212	205	49.9	248	79	19.2	261	37	9.0	383	27	6.6	1,948	43	10.4	4,667	20	4.9	7,719	412
1960	202	205	49.3	258	81	19.5	262	37	9.0	396	28	6.7	2,102	44	10.6	4,645	20	4.9	7,865	416
1961	195	203	50.4	225	73	18.1	242	34	8.4	420	30	7.5	2,183	46	11.3	4,383	17	4.3	7,648	403
1962	204	214	50.6	240	76	18.1	255	36	8.5	414	29	6.8	2,201	48	11.5	4,426	19	4.5	7,740	422
1963	224	243	52.9	242	77	16.8	262	36	7.8	499	34	7.4	2,250	50	10.9	4,463	19	4.2	7,940	459
1964	238	267	54.9	220	74	15.2	270	38	7.7	563	38	7.8	2,299	53	10.8	4,060	18	3.6	7,630	487
1965	259	293	57.2	224	72	14.0	279	39	7.7	555	38	7.5	2,367	54	10.6	3,644	15	3.0	7,228	512
1966	274	309	57.9	221	70	13.1	327	45	8.5	589	41	7.7	2,386	55	10.3	2,962	13	2.5	6,749	534
1967	281	327	59.1	244	77	13.9	367	52	9.4	542	38	6.8	2,079	49	8.9	2,360	10	1.8	5,873	553

and 500,000 tons a year. The percentage of total production accounted for by mines that produce less than 100,000 tons rose from 20 percent in 1947 to 27 percent in 1949, but retreated fairly steadily thereafter to the 1947 level—21 percent in 1966 and 18 percent in 1967. (RX 167; Netschert 4045–47.)

The average production of mines producing 500,000 tons or more a year ranged between 818,000 tons and 910,500 tons during the period 1947 through 1954 (except for the year 1949, when it dipped to 780,000 tons), was between 940,000 tons and 988,000 tons during the period 1955 through 1959, passed 1,000,000 tons in 1960, and thereafter gradually increased to 1,164,000 tons in 1967.[15] These mines, now accounting for almost 60 percent of total production, are best able to take advantage of mechanization, particularly the employment of efficient and extremely expensive equipment. Similarly, only such large mines are able to satisfy contract requirements for the delivery of 1 million tons of coal a year or more at a price low enough to compete with nuclear energy and other fuels. (Sporn 4574–75; Netschert 4047–48.)

Large mines also enable the use of the lower-cost methods of transportation. A unit train is practicable only in the movement of substantial tonnages, justifying the dedication of motive power and a sufficient number of coal cars to shuttle between mine and consumer (Lee 1607–09; Netschert 4025–27). Similarly, extra high voltage transmission is economic only with very large quantities of electricity, and the greater the distance between the generating plant and the load center, the larger the load required to make the transmission feasible; thus, the use of extra high voltage transmission is practical only where a large generating plant is located at a large coal mine (Netschert 4037–38).

The significant increase in the size of generating plants that has occurred in the last 20 years has required the assembling of much larger coal reserves and the operation of much larger mines (Netschert 4037–38; Sporn 4572–77). Fifteen years ago, a generating unit of 200 or 300 megawatts would have been considered large. Today, units of up to 1,300 megawatts are being designed, and even larger units will be built in the future. (Sporn 4576–78; Lee 1598–99.)

Modern utility plants are multi-million dollar investments (Reeves 1279) that generally range in cost from $50 million to $300 million

[15] The average production figures were derived by dividing column 1 of RX 166 (the number of Class 1 mines) into column 1 of RX 167 (the total annual production of Class 1 mines).

(Lee 1612; RPF 136). Additional capital investment may be required, such as the $25 million slurry pipeline to Mojave (Mullins 3628). The 4,000-megawatt plants expected to be built in the future will cost $600 million (Sporn 4577).

Total fuel costs over the useful life of a generating plant are substantially greater than the capital investment in the plant (RPF 137).

A 1,300-megawatt generating unit requires between 3.5 million and 4 million tons of coal a year, or about 100 million tons over its useful life (Lee 1598–99). In the case of a mine-mouth plant, it is necessary for the utility to obtain a coal supply contract covering the entire requirements of the plant for the duration of its useful life, because once the plant is located at the mine it has few, if any, competitive alternatives for its fuel supply. Moreover, because of the importance of controlling fuel costs at a low level, utilities tend to enter into long-term contracts (10 years or more, usually with renewal options) for the supply of any new generating plant, even though it is not a mine-mouth plant. (Reeves 1279–80; Lee 1598–1600; Mullins 3582–83; Ball 4298–99; Sporn 4574–77.)

The necessity for assembling very substantial units or reserves and the increase in the size of mines, with the concomitant use of much larger equipment, have resulted in a great increase in the capital requirements for the operation of a successful coal business (Phelps 3367; Mullins 3622–23; Netschert 4016–17, 4020–21, 4259).

As a general average throughout the country, coal reserves cost between 2 cents and 5 cents a ton (government leases about 17.5 cents per ton) Phelps 3415), although in certain sections of the country, where reserves are scarce, such as southern Illinois, reserves may cost as much as 20 cents to 25 cents a ton (Colnon 5221). After acquisition of a reserve, exploration costs must be incurred—for exploration of a 500-million-ton reserve (Black Mesa), $1.5 million was spent (Phelps 3419, 3345).

A large strip mine requires an investment of between $4 and $10 for each ton of annual production capacity (Reeves 1237), while the cost of a large (million ton per year) underground mine in deep overburden amounts to $15 to $20 per annual ton of production (Gossard 5889, 5904). The Black Mesa mine will cost Peabody about $28 million (Mullins 3628). The cost of modern mining equipment is also high. Thus, the shovel at Peabody's River King strip mine cost $14 million erected at the mine (Phelps 3367), while the shovel at its Black Mesa project will cost $10 million and the dragline, $5 million (Lee 1583–84).

The high cost of large mining equipment requires that it be utilized continuously in order that the capital investment of the machine may be fully recovered over its useful life. The depreciation on a large machine involves so much money that it is generally run 24 hours a day, 7 days a week. (Phelps 3367; Netschert 4002.) Depreciation on the large strip shovel at Peabody's River King mine is about $1 million a year, or $2 a minute (Phelps 3367). Before such a large fixed investment can be made, a coal producer must have the assurance—which is provided by a long-term, large-volume sales contract—that it will be able to utilize the machine efficiently over its useful life (Mullins 3555–56; Netschert 4003; Kelce 3683).

e. *Requirements for Marketing Coal*

To compete successfully for sales to electric utilities under large-volume, long-term contracts, a coal company must have experienced managerial personnel in the areas of land acquisition, geological exploration, mining engineering and operation, transportation, market analysis, sales, and finance (Phelps 3409–16; Mullins 3556–62; Fox 6134–36). Top executives must consider coal quality, production and transportation costs, and availability of cooling water in preparing a "package" for marketing (Mullins 3561–62; Christensen 5185–86).

Selection of economic coal reserves is not simply a matter of choosing a reserve from United States Geological Survey maps, which show the general location of all significant coal-bearing formations in the United States. Rather, a combination of geological, mining, and marketing skills is required. (Phelps 3412–14; Mullins 3560–61; Kelce 3683; Fox 6134–36.)

Thus, a preliminary market analysis, based on the location of substantial utility customers which might be supplied from the reserve, the possible methods and costs of transportation, and the availability of water for potential generating plants, must be made by marketing personnel (Mullins 3553–56; Robinson 4420; Christensen 5185–86). Those responsible for land acquisition must negotiate with land owners to obtain (preferably by option, otherwise by lease or purchase) the necessary surface and mineral rights to permit preliminary exploration (Lee 1704–05; Phelps 3411; Mullins 3558). Geologists must then conduct exploratory drilling to derive information about the quality and size of the reserve (Phelps 3411–12). This information is utilized by coal mining engineers and operating personnel to assess the economic feasibility of mining the reserve and of preparing the coal for sale. Analysis of overburden and coal-seam conditions must be made, the best mining methods must be determined and the

mine must be laid out on paper, and estimates of per-year reserve exhaustion, equipment replacement, and equipment efficiency must be made. (Phelps 3418; Mullins 3559–60.) Estimates of production and preparation costs, based on the most economic methods, are then made by financial personnel (Mullins 3559–60). When all of this information has been assembled and combined, it is given to top management for review and final decision on whether to acquire the reserve in question (Phelps 3413–14; Mullins 3560–61).

After control of a reserve has been obtained, it is necessary to verify and refine the estimated production costs before conducting other than preliminary negotiations for a supply contract. The long-term contract is generally signed before designing a mine, obtaining the equipment for it, and opening the mine to serve that contract. Accordingly, mining conditions and costs cannot be determined by actual operation of the mine on a commercial basis. (Lee 1590; Reeves 1268–69; Nelson 2272–73; Heiner 2601–02; Peperakis 2829; Phelps 3416–17, 3458–60; Kelce 3683–86; Macke 3813–14; Ball 4297–99; Christensen 5178). Instead, costs must be calculated on the basis of further exploratory drilling and determined for the life of the expected supply contract, which may well be as long as 35 years in the case of a large modern utility plant which requires large reserves (Lee 1613–14, 1718; Phelps 3417–20; Mullins 3553–55, 3626–27; J. Weir 4347–50; Sporn 4497–98; Gossard 5911–12).

Transportation costs depend primarily upon the distance hauled, the means of transportation used, and the quality of the coal shipped (Reeves 1218–20; Lee 1605–09; Netschert 3987–90, 4018–20, 4025–27). Accurate estimation of these costs, which, with mining costs, make up the largest share of the delivered cost of coal (Netschert 4021–24; RX 165), requires experience in dealing with carriers (primarily railroads) and in the mechanics, as well as the economics, of unit-train and barge operations (Lee 1605–09; Netschert 4024–25). In unit-train operations, close coordination between the coal company, the utility, and the railroad is needed because the trains themselves and the facilities for loading and unloading them must be tailormade for the operation, and an equitable apportionment of capital costs must be negotiated (Netschert 4026–27). Moreover, in instances where low-cost transportation is not readily available, the coal company may have to design and engineer a railroad from the mine (Phelps 3402–05, 3443–47; Mullins 3646–47).

After all of these steps have been taken, the company is finally in a position to submit a firm proposal to the prospective customer, either through direct negotiations or through competitive bidding. All major negotiations between coal producers and utilities are conducted by top-level management because of the high stakes involved, and the negotiations are continued as long as necessary (often for several years) to refine the contract to meet fully the needs of the utility. (Mullins 3629–30.)

After the contract is made, the coal producer must fulfill its requirements in such a way as to assure itself a profit and to make more probable the contract's renewal by the customer. This requires operating personnel who are acquainted with and can continuously keep in operation the large and expensive machines that dominate modern mining. (Phelps 3464; Netschert 3997–4003.) Moreover, the producer must be prepared to provide technical assistance to the customer regarding the proper utilization of coal in the customer's boilers. The promise of such technical assistance may be an important factor in the customer's decision to make the contract in the first instance. Technical assistance requires a staff with expertise in the operation of modern utility plants, especially the boiler component, and with liaison to the boiler and equipment manufacturers who supply the utility industry. (Lee 1605; Zornes 4780–83.)

f. *Time Requirements for Coal Operations*

Of the 33 leading coal companies, only one had less than 25 years of experience in the coal industry as of January 1, 1969, and this one exception had 15 years of experience (Robinson 4417).

The acquisition of significant coal reserves is a lengthy process. Peabody began acquiring reserves for its River King strip mine some 20 years before the mine was opened in 1957, and the acquisition of additional reserves continues today. (RX 11–B, RX 11–D.) Even where large blocks of land containing coal reserves are under single ownership, negotiations for the acquisition of the reserves can take several years. Utah Construction and Mining Company took 4 years after obtaining a prospect permit for the Four Corners reserve before obtaining a lease on the reserve from the Navajo Indians (Reeves 1207, 1209, 1287–88), and Peabody took an equal amount of time to negotiate with the Navajos for lease of the Black Mesa reserves (Phelps 3443).

Extended periods are also often required for the negotiation of a sales contract (Ball 4333–34). Peabody's negotiations with South-

ern California Edison to supply coal to the Mojave plant extended over 5 years (Lee 1582; Mullins 3629). Peabody's negotiations with Minnesota Power Light Company for the sale of coal to the new Cohasset plant lasted for about a year (McGuire 4605, 4607, 4633; Lee 1602), even though Minnesota Power & Light had spent about 4 years before these negotiations in making extensive studies of possible means of reducing its fuel costs. As a result of these studies, it was even able to suggest the area from which Peabody should consider supplying the coal. (McGuire 4600, 4607.) Even the small contract with Nevada Power Company for the supply of coal to Moapa took a year and a half to negotiate (Lee 1574).

After a coal supply contract is signed, it often takes considerable additional time to bring a new mine into full production. The sinking of the shaft at Peabody's Mine No. 10 took 18 months (RX 12–B), and the fabrication and erection of the River King stripping shovel required nearly 3 years (RX 11 F–G). Three years elapsed between the signing of the supply contract and the first production of coal at Four Corners (Reeves, 1210, 1288–89), and the same amount of time will have elapsed between the signing of the Mojave contract and the first delivery of coal from Black Mesa (Lee 1582; Phelps 3443; Mullins 3629).

In addition to the time required to develop a mine for production, another factor that may delay start-up is the long period of time that is required for the construction of a new generating plant. Lead time on a coal-fired generating plant averages between 3 years and 5 years, depending on size and location (Lee 1715; Frisbee 5266), but larger plants, such as the 1,230-megawatt Cardinal plant and the 1,000-megawatt plant that Pacific Power & Light Company is presently considering, may have lead times as long as 6 years (Sporn 450–06; Frisbee 5248–49).

As a result of all these factors, the total lapse of time between preliminary exploration of a reserve and the first production of coal from it may be very substantial. Peabody began negotiations with the Navajo Indians to lease the Black Mesa reserves in 1960 (Phelps 3443). It began negotiations with Southern California Edison to supply coal from those reserves to a new mine-mouth generating plant in 1962 (Lee 1582). It leased the reserves in 1964 (Phelps 3443). It signed a contract with Southern California Edison in 1967 to deliver coal from Black Mesa to the Mojave plant beginning in 1970 (Lee 1582; Phelps 3443; Mullins 3629). Thus, 10 years will have passed between the time that Peabody began negotiations for the Black Mesa reserves and the time that

Similarly, Utah Construction obtained a prospect permit to drill the Four Corners reserves in 1953 and actively explored those lands from that time up to 1957, when it obtained a lease on the property (Reeves 1207, 1209, 1288). A customer for the coal was not obtained, however, until late 1960, when Arizona Public Service Company agreed to purchase coal for a mine-mouth plant under a 35-year contract (Reeves 1210). The power plant did not go into operation until 1963, and coal was mined at Four Corners for the first time in that year (Reeves 1210, 1288–89), 10 years after the prospect permit was obtained.

Utah Construction first mined coal in 1943, when it contracted to perform strip mining in Pennsylvania for Pittsburgh Coal Company (Reeves 1206; Christensen 5163), acquired a small coking coal mine in 1948 (which was exhausted in 1958) (Reeves 1206; Christensen 5169), and began extensive investigation of western coal properties about 1951 (Christensen 5170–72). As detailed *supra*, its first deliveries under a long-term contract with a public utility were in 1963, some 20 years after it first became involved with coal.

Utah Construction holds reserves at Craig, Colorado, of approximately 200 million tons, which it has had since about 1955; and reserves of approximately 100 million tons at Kanab, Utah, which it acquired in 1963. Although Utah Construction has attempted to sell coal from these reserves since it acquired them, it has been unsuccessful to date. (Reeves 1298–1301.) Thus, 26 years after its first coal mining venture, and 18 years after it first began extensive investigation of coal reserves in the West, Utah Construction has made only one coal supply contract with an electric utility.

Kerr-McGee Corporation undertook about 12 years ago to go into the coal business (Gossard 5887, 5906). It began to acquire coal reserves in 1957, and thereafter discussed with several public utilities the possibility of supplying steam coal under long-term contracts; but it has never made a bid because of an inability to estimate costs properly (Gossard 5887, 5902–03). In 1967 Kerr-McGee started putting in an underground mine on one of its reserves, and expected to begin production of coking coal on a small scale from this reserve in 1969 (Gossard 5887–88, 5905).

In the judgment of one coal company executive, it would take a firm attempting to enter the coal business today at least 8 years to 10 years to achieve sales on a significant scale (annual sales of 5 million to 10 million tons), if it were able to succeed in such an undertaking at all, and the firm would have to pay high prices for its reserves (Colnon 5222–23).

From his review of the record—including the testimony on the

personnel and develop expertise to do all of the jobs involved in competing for a big utility contract and on the time it takes even an experienced coal company to develop a mine to fill a particular contract after obtaining it—Professor Fox concluded that a minimum of 10 years to 12 years would be required for a company to become a substantial competitor in the coal business after it decided to enter (Fox 6179–80).

E. PRESENT STATE OF THE COAL BUSINESS

1. *Geography*

Although 70 percent of the coal reserves of the United States are located west of the Mississippi (including Alaska), production in that area in 1967 totaled only 29 million tons of coal, or about 5 percent, while 524 million tons, or about 95 percent, were produced east of the Mississippi River (RX 173).

The States of West Virginia, Kentucky, Pennsylvania, Illinois, Ohio, Virginia, and Indiana accounted for 90 percent of total production. No state west of the Mississippi accounted for as much as 1 percent. (RX 172 A–B.) The following table (RX 172 A–B) sets forth 1967 coal production and reserves by state:

1967 Coal production and reserves, by State

State by Rank in Production	1967 production		Reserves	
	1,000 tons	Percent of U.S. total	1,000 tons	Percent of U.S. total
	(1)	(2)	(3)	(4)
1. West Virginia	153,749	27.82	51,017,000	6.60
2. Kentucky	100,294	18.15	32,979,000	4.26
3. Pennsylvania	79,412	14.37	28,766,000	3.72
4. Illinois	65,133	11.79	69,878,000	9.03
5. Ohio	46,014	8.33	20,931,000	2.71
6. Virginia	36,721	6.64	4,856,000	0.63
7. Indiana	18,772	3.40	17,390,000	2.25
8. Alabama	15,486	2.80	6,769,000	0.88
9. Tennessee	6,832	1.24	1,326,000	0.17
10. Colorado	5,439	0.98	40,318,000	5.21
11. Utah	4,175	0.76	16,125,000	2.08
12. North Dakota	4,156	0.75	175,310,000	22.67
13. Missouri	3,696	0.67	11,680,000	1.51
14. Wyoming	3,588	0.65	60,355,000	7.80
15. New Mexico	3,463	0.63	30,738,000	3.97
16. Maryland	1,305	0.24	586,000	0.08
17. Kansas	1,136	0.21	9,343,000	1.21
18. Alaska	925	0.17	65,044,000	8.41
19. Iowa	883	0.16	3,260,000	0.42
20. Oklahoma	823	0.15	1,650,000	0.21
21. Montana	371	0.07	110,851,000	14.33
22. Arkansas	189	0.03	995,000	0.13
23. Washington	59	0.01	3,089,000	0.40
24. South Dakota	5	(1)	1,016,000	0.13
25. Georgia			9,000	(1)
26. Michigan			102,000	0.01
27. North Carolina			55,000	0.01
28. Oregon			166,000	0.02
29. Texas			6,463,000	0.84
30. Other States [2]	1	(1)	2,361,000	0.31
Total	552,626	100.00	773,456,000	100.00

[1] Less than 0.01.

[2] Arizona, California, Idaho, Nebraska, and Nevada

Because coal has a relatively low value in relation to its weight and a relatively high transportation cost in relation to its value, its transportation is largely confined within local or regional areas (Phelps 3422; Fox 6081–82; but see *supra*, pp. 777–78).

In the states east of the Mississippi, coal accounted for 82 percent of the total fuel input of electric utilities in 1967; west of the Mississippi, it accounted for only 18 percent (RX 174).

A more detailed analysis shows wide variations in the position of coal as a fuel for the generation of electricity both east and west of the Mississippi. In the five Census Regions east of the Mississippi, its position ranged from 43 percent of the fuel input of electric utilities in New England to 96 percent in the East North Central Region. In the four Census Regions west of the Mississippi,[16] coal was not used at all by utilities in either the West South Central Region or the Pacific Region, while accounting for 52 percent of input in both the West North Central Region and the Mountain Region (RX 154). Within the Mountain Region, the position of coal ranged from 14 percent in Arizona to 86 percent in Montana (RX 174).

Natural gas occurs in abundance in the West South Central Region and is available at a cost so low that other fuels are unable to compete in that area (Netschert 3943). Moreover, while there are some coal reserves in the West South Central Region, it is not one of the principal reserve areas in the country (RX 172 A–B). There is very little coal in the Pacific Region, which has traditionally used gas, both from substantial local production and from neighboring areas, as well as substantial amounts of hydropower (Netschert 4165, 3948–49; RX 154). West of the Mississippi, coal is an important fuel for electric utilities only in the sparsely populated West North Central and Mountain Regions (Netschert 3943–44; RX 154).

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[16] The four Census Regions west of the Mississippi, and the states included, are as follows:

West North Central: Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota.

West South Central: Texas, Oklahoma, Louisiana, and Arkansas.

Mountain: Montana, Idaho, Nevada, Arizona, New Mexico, Wyoming, Utah, and Colorado.

Pacific: California, Washington, and Oregon.

Even though, in common parlance, the "West" may include all the 22 States west of the Mississippi River, in these findings, in accordance with Census terminology, the "West" generally means only the 11 States in the Mountain and Pacific Regions. When the entire area west of the Mississippi is intended, it is so identified.

None of the 25 largest utility consumers of coal in 1967 was located in the West, and there were only two mine-mouth power plants in the West in 1967 which consumed more than 1 million tons of coal—the Dave Johnston plant of Pacific Power & Light at Glenrock, Wyoming, and the Four Corners (Shiprock) plant of Arizona Public Service near Fruitland, New Mexico (RX 155, RX 175 A–H, RX 19, RX 20–A, RX 20–D; Netschert 3965–66, 4081–82; Mullins 3639–40; Frisbee 5241–43; Reeves 1209–11, 1215).

Despite the relative insignificance of the coal industry in the West, the same changes in consumption patterns have occurred there as in the country as a whole. Thus, in every one of the States of the Mountain Region, demand for coal by electric utilities has been on the rise, while, generally, all other sources of demand for coal have been declining.[17] During the 10-year period 1958 through 1967, the demand by electric utilities, as compared with 1957, increased by 325 percent in Colorado, 575 percent in Wyoming, over 6,600 percent in New Mexico, and over 13,000 percent in Arizona and Nevada. A much less significant gain was made in Utah, where demand increased only 30 percent over the same period, but the utilities were the only growing source of demand there as well. (RX 178 A–B; Netschert 4090–91; see Netschert 5988–99.)

In 1967, electric utilities consumed 80 percent, 92 percent, and 99 percent of the total steam coal consumed, respectively, in Colorado, Wyoming, and New Mexico, the three major coal consuming states in the West (RX 177; Netschert 4088). Steam coal consumption in the States of the Mountain Region in 1967 is shown by RX 177 as follows:

Steam Coal Consumption in Certain Western States, Tonnage and Percentage Distribution by State, 1967

State	Electric utilities		Retail dealers		All others		Total (1)+(3)+(5)
	Tonnage	Percent of total	Tonnage	Percent of total	Tonnage	Percent of total	
	(1,000 tons) (1)	(2)	(1,000 tons) (3)	(4)	(1,000 tons) (5)	(6)	(1,000 tons) (7)
Colorado	2,919	79.69	289	7.89	455	12.42	3,663
Utah	479	48.48	193	19.53	316	31.98	988
Montana and Idaho	328	33.88	427	44.11	213	22.00	968
Wyoming	2,291	91.86	28	1.12	175	7.02	2,494
New Mexico	2,504	99.13	5	0.20	17	0.67	2,526
Arizona and Nevada	661	94.43	25	3.57	14	2.00	700

[17] The single exception to this is the demand by retail dealers in Arizona and Nevada, which in 1967 was 4 percent higher than in 1957. Even in this instance, however, demand was lower in 1967 than in the 4 preceding years, and in absolute terms was only 25,000 tons. (RX 178–B.)

Although no coal-fired generating plants are located in California, electricity will be supplied to southern California in the near future from the two largest coal-burning generating plants in the West, the Four Corners plant at Four Corners, New Mexico, and the Mojave plant at Davis Dam, in Nevada (Reeves 1212–13; Lee 1580–82; O'Brien 5282–84, 5288–89).

2. *Industry Structure*

The record fails to show the total number of business enterprises producing coal in the United States, but there were 522 "affiliated operating groups" [18] producing 100,000 tons of coal or more in 1967, which accounted for 92 percent of total production. In 1947, 703 such groups accounted for 77 percent of total production.[19] (RX 168, RX 169.)

Analysis of the various size categories of coal producers shows structural changes in the industry that largely reflect the changes in production and marketing described *supra*.

The small coal companies, many of them family and local companies, which served the traditional railroad and retail demands for fuel and which had inadequate capital to take advantage of the development of new production techniques and assemble the large reserves required to bid for utility business, have been unable to grow in the modern condition of the coal industry. Instead, they either have amalgamated into larger enterprises [20] or have ceased doing business or have confined themselves to serving the limited local sources of demand. (Netschert 3985–87, 4047–52, 4257.)

During the period 1947–1967, the total production of enterprises producing less than 100,000 tons of coal a year steadily declined from 23 percent to 8 percent of total domestic coal production; the portion of total production accounted for by those producing between 100,000 tons and 3 million tons per year remained fairly steady at

[18] "Affiliated operating groups" include parent and subsidiary corporations constituting a single decisionmaking entity—the only meaningful type of entity for purposes of analyzing industry structure (Netschert 4053–55).

[19] Between 1947 and 1961 there was a fairly consistent decline in the number of operating groups with annual production of 100,000 tons or more, the figure dipping below 400 in 1954 and again in 1961, but the trend has been upward since 1961 (RX 168).

[20] The degree to which mergers have been responsible for structural changes in the coal industry was not developed in this record, and complaint counsel have made no reference to the subject in their submittals. The record contains exhibits showing acquisitions by Peabody (CX 127 A–B) and by Consolidation Coal Co. (CX 186), but other exhibits on this subject were withdrawn (Tr. 751–53).

about 39 percent of total production until it dipped to about 35 percent in 1966 and 1967; the production of firms with an annual production of 1 million tons or more a year increased, rather consistently, from 48 percent to 70 percent of total production; and the production of groups producing 3 million tons or more a year erratically increased from 38 percent to 57 percent of total production (RX 169; Netschert 4050–52).

There has been a gradual decline in the number of large producers—those with an annual production of 1 million tons or more. There were 107 such firms in 1947, but this total declined to 74 in 1949. In the early 1950's the number of million-tons-plus firms ranged between 69 and 94, until hitting a low point of 65 in 1958. From 1959 through 1967, the number of such firms has ranged between 66 and 72, and there were 68 such firms in 1967, with an aggregate production of 387 million tons, or 70 percent of total production. (RX 168, RX 169.)

In the largest producer class—those annually producing 3 million tons or more—there were 33 firms in 1947. The number declined to 18 in 1949, and fluctuated between 27 and 32 during the years 1950 through 1958 (except for 1954, when it dipped to 22). Since 1959 the number has fluctuated between 21 and 26, with 26 such companies in both 1966 and 1967. (RX 168.) In 1967, these companies accounted for nearly 317 million tons, or 57 percent of total production (RX 169).

This analysis may be contrasted with the analysis offered by complaint counsel in support of their proposed finding that "Concentration of coal production in the hands of major operating groups has become pronounced." (CPF 41.) Not only does this proposed finding contradict the testimony of the Commission's own economist (Folsom 758), but it relies on a simplistic comparison of 1947 statistics with those of 1967. The mere fact that during the 20-year period from 1947 to 1967 the number of operating groups annually producing more than 1 million tons of coal declined from 107 to 68, is not a fair representation of a trend.

The statistical record shows that the 1947 total of 107 was the highest during the 20-year period. The comparison relied on by complaint counsel may be put in perspective by noting that in 1949 the total number of producers of 1 million tons or more was 74, compared with 72 in 1966, and 68 in 1967. Although a comparison of the 1947 total with the 1967 total is not without significance, a proper analysis demands more—the data for each year and the changes during the course of the period.

As already noted (*supra*), examination of the cited exhibit (RX

168) shows not only the absolute fact that in recent years there has been a relatively high number of operating groups, ranging from 66 to 72, but that throughout the decades of the 1950's and the 1960's the number of such groups has generally ranged in the 60's and the 70's. Even though there has been a diminution in the number of significant coal producers, the existence of 68 such groups in 1967 negates the charge of undue concentration in coal production.

The following table (RX 170) lists the 26 leading coal producers in the United States for the year 1967 and includes the name of the parent company [21] (when applicable), the total assets and sales revenues, and the production of each enterprise:

Consolidated Assets, Sales Revenues and Production of Coal Producers with Production of 3,000,000 Tons or More in 1967, (Ranked by Coal Production)

Tonnage production rank	Coal producer	Parent company	Total assets	Sales revenues	Production
			(Millions)		(1,000 tons)
(1)	(2)	(3)	(4)	(5)	(6)
1	Peabody	Kennecott Copper	[1] $1,489	[1] $757	59,407
2	Consolidation	Continental Oil	2,354	2,083	56,460
3	Island Creek	Occidental Petroleum	[1] 779	[1] 826	25,880
4	Pittston	Pittston	299	387	19,681
5	U.S. Steel	U.S. Steel	5,606	4,006	19,010
6	United Electric and Freeman	General Dynamics	920	2,253	14,124
7	Bethlehem Mines	Bethlehem Steel	3,084	2,594	12,623
8	Eastern Associated	Eastern Gas and Fuel	290	203	12,339
9	Old Ben Coal	Standard Oil of Ohio	[1] 736	[1] 724	10,272
10	Pittsburg & Midway	Gulf Oil	6,458	4,202	8,974
11	North American Coal	North American Coal	45	37	8,692
12	Ayrshire Collierics	Ayrshire Collieries	94	62	8,604
13	Southwestern Illinois	Southwestern Illinois	N.A.	N.A.	7,527
14	Westmoreland Coal	Westmoreland Coal	35	32	6,337
15	Valley Camp	Valley Camp	N.A.	N.A.	5,487
16	Republic Steel	Republic Steel	1,523	1,266	4,646
17	Central Ohio, Central Appalachian, Central Coal and ½ Windsor Power House.	American Electric Power	2,156	524	4,639
18	Jones and Laughlin Mining and Gateway Coal (2).	Jones and Laughlin Steel.	1,093	904	[2] 4,440
19	Carbon Fuel	Carbon Fuel	N.A.	N.A.	4,136
20	Beil and Zoller and Zeigler Coal and Coke.	Zeigler Coal and Coke	20	16	4,079
21	Winding Gulf	Winding Gulf	N.A.	N.A.	4,067
22	Rochester and Pittsburgh	Rochester and Pittsburgh.	42	31	3,863
23	Ranger Fuel Corp	Ranger Fuel Corporation	N.A.	N.A.	3,451
24	Amherst Coal	Amherst	N.A.	N.A.	3,443
25	Barnes and Tucker	Barnes and Tucker	N.A.	N.A.	3,220
26	Youghiogheny and Ohio	Youghiogheny and Ohio	N.A.	N.A.	3,074
	Total of production listed				318,475
	Total industry production				552,626
	Tonnage listed above as percent of total industry production (percent)				57.6 3

N.A.: Not available.

[1] Coal company acquired in 1968. Assets and revenue figures are for combined coal company and parent company in 1967.

[2] Gateway Coal is owned 64.5 percent by Jones & Laughlin, 22.5 percent by Pittsburgh Steel (remaining ownership not given). Gateway leases its coal properties, but the production from them is distributed to the steel companies in proportion to their ownership interests in Gateway. Production shown is for Jones & Laughlin Mining Co. (3,021,000 tons) plus 64.5 percent of the production by Gateway Coal Co. (1,419,000 tons).

[21] **As shown in footnote (1) of the table, RX 170 does not represent the actuality of 1967 because 3 of the coal company acquisitions, including Kennecott's acquisition of Peabody, occurred in 1968. However, the comparisons may be accepted in recognition of the practical problem of obtaining more current data. (Netschert 4264–66; Tr. 6033–37.)**

None of the producers listed in the table has as much as 11 percent of total industry production. Each of the 2 largest producers, Peabody and Consolidation, accounted for approximately 10 percent of total United States production, for a total of 21 percent.

In 1967 the 4 largest producers accounted for 29.2 percent of total production, and the 8 largest for 39.7 percent. In the previous year the top 4 producers accounted for 27.6 percent, and the top 8 for 37.4 percent. In 1954 the top 4 accounted for 15.8 percent and the top 8 for 23.6 percent. A table combining the data in CX 183 and in RX 170 shows the breakdown for the top 4 companies and the top 8 companies for the years 1954, 1966, and 1967 as follows:

	Production (millions of tons)	Percent of total
1954 [1]		
1. Pittsburgh Consolidation Group	22.9	
2. United States Steel	22.7	
3. Sinclair Southern	8.3	
4. Eastern Gas & Fuel	8.1	
Top 4	62.0	15.8
5. Island Creek-Pond Creek	8.1	
6. Bethlehem Steel	8.1	
7. Truax-Traer	7.2	
8. Peabody	7.0	
Top 8	92.4	23.6
Total, all companies	392.0	100.0
1966 [1]		
1. Peabody	54.0	
2. Consolidation	51.4	
3. Island Creek	23.7	
4. United States Steel	18.0	
Top 4	147.1	27.6
5. Pittston	15.5	
6. General Dynamics	13.6	
7. Eastern Associated	12.1	
8. Bethlehem Steel	11.2	
Top 8	199.5	37.4
Total, all companies	533.9	100.0
1967 [2]		
1. Peabody (Kennecott)	59.4	
2. Consolidation (Continental Oil)	56.5	
3. Island Creek (Occidental Petroleum)	25.9	
4. Pittston	19.7	
Top 4	161.5	29.2
5. United States Steel	19.0	
6. United Electric and Freeman (General Dynamics)	14.1	
7. Bethlehem Mines (Bethlehem Steel)	12.6	
8. Eastern Associated (Eastern Gas & Fuel)	12.3	
Top 8	219.5	39.7
Total, all companies	552.6	100.0

[1] From CX 183.
[2] From RX 170. The parent company, if any, is indicated in parentheses. The figures have been rounded.

It will be observed that in each of the 3 years there were shifts among the industry leaders, although Peabody and Consolidation were the 2 top producers in both 1966 and 1967. In 1954 the predecessor of Consolidation was the top producer, and Peabody was 8th on the list.

According to a Commission economist called by complaint counsel, the coal industry in the United States is not "highly concentrated or even moderately concentrated" but has a "relatively low level of concentration (Folsom 758).

Both in the category of 1 million tons or more of annual production and in the category of 3 million tons or more of annual production, the number of affiliated operating groups is sufficiently large to insure effective competition among them (Fox 6162–64).

Of the 26 leading coal producers, 5 (including 2 of the top 10) are "captive producers." These (in order of rank) are U.S. Steel, Bethlehem Steel, Republic Steel, American Electric Power, and Jones & Laughlin Steel (Netschert 4056; see Tr. 5948–58). Although U.S. Steel is considered in these findings as a "captive producer," the record shows that it has competed, on at least one occasion, with coal companies for a major coal contract with an electric utility (McGuire 4608; RX 201–A).

Nine of the top 10 are subsidiaries of companies whose main businesses are in other industries. Four of the 10 leading coal producers are subsidiaries of oil companies: Continental Oil (acquired Consolidation Coal in 1966), Occidental Petroleum (acquired Island Creek in 1968 and Maust in 1969), Standard Oil (Ohio) (acquired Old Ben Coal in 1968), and Gulf Oil (acquired Pittsburg & Midway in 1963) (Netschert 4055–59; Robinson 4400; RX 170).

The data shown in RX 171 make clear that not only the leading coal producers (both captive and commercial), but other coal producers as well, constitute substantial enterprises, such as the oil companies listed above.

F. COMPETITION OF COAL AND OTHER ENERGY RESOURCES

1. *General*

Steam coal is sold as a source of heat energy. The other basic thermal-energy sources—oil, natural gas, and nuclear energy—are

sold for exactly the same purpose. Suppliers of the three fossil fuels compete to serve the same demands—fuel for residential and commercial space heating and for energy for the operation of industrial machinery. Competition among the various fuels to serve this demand is such that changes in the patterns of coal consumption cannot be understood and explained except in the context of changes in the general patterns of fuel consumption. (Netschert 3932–33; Fox 6066, 6069, 6071; *supra*, pp. 772–75.)

For example, the virtual disappearance of the railroad market for coal is explicable only by the fact that the railroads have turned to diesel fuel oil to meet their fuel requirements (Heiner 2602–03; Mullins 3552; Kelce 3662–63; Fox 6063; Netschert 3928; *supra*, p. 773). Similarly, the great decline in consumption of coal for residential and commercial heating is the result of the increased competitive success of oil and gas in that area, while the failure of the coal industry to increase sales to industrial consumers, as well as to government installations, as the economy expanded is likewise due to the competitive inroads of oil and natural gas (Nelson 2168–69; Heiner 2603–05, 2626; 2640; Mullins 3552; Kelce 3662; Miller 3857; Netschert 3929; *supra*, pp. 773–74). In each of these instances, the competitive pressures of the other fossil fuels has been such as not only to limit and reduce the price of coal but also actually substantially to reduce the sales of coal (Fox 6064–65, 6071–72).

Coal depends for its use today and in the foreseeable future upon its ability to compete successfully with the other energy resources to supply the demand of the electric utilities (Nelson 2265–66; Netschert 3931, 3936; J. P. Weir 4339–40; Sporn 4545, 4568; Gossard 5922, Fox 6068). Here it faces not just the competition of oil and gas, and to a more limited extent the competition of oil and gas, and to a more limited extent the competition of hydropower, but also, and most important, the competition of nuclear energy (Mullins 3572–73, 3646; Kelce 3675–76; Netschert 3935–36; Sporn 4520–21, 4545).

In 1966, coal was the primary energy source used in the generation of electricity in the United States, accounting for 55 percent. Natural gas accounted for 25 percent, hydropower for 14 percent, oil for 5 percent, and nuclear energy for 0.6 percent (RX 189).

The fuel cost of an electric utility is the single largest item of its operating costs and is of great concern to its management (Mullins 3630). Because of the importance of a particular fuel-purchasing decision, utility customers are very careful in evaluating the comparative merits of proposals made to them and are active in seeking out additional possible suppliers. They also work extensively with competing suppliers to attempt to devise means of achieving price reductions. (McGuire 4600–17, 4639.) Competitive proposals are evaluated extensively by teams of experts, including engineers and finance people, to determine which fuel-supply offer, in conjunction with the capital costs related thereto, will provide the lowest cost electricity (Lee 1613; 1603–05; McGuire 4600–05). Only after management is satisfied that the most thorough and accurate possible comparison of competing proposals has been made is a decision reached as to which of the various competing fuels to purchase and from which supplier—and that decision is based almost solely on cost considerations (Lee 1603–05, 1616–17; Netschert 3946–47; McGuire 4625–26, 4641–47; Corey 4704–11, 4715–22, 4726–29; O'Brien 5289–92; Gossard 5923).

2. *Nuclear Energy*

In 1964, nuclear energy joined the fossil fuels—primarily coal—and hydropower in vigorous competition for supplying the fuel requirements of the electric utility industry (Tremmel 5108–09; Netschert 3935–37).

The placing into operation of a nuclear-fueled generating plant involves a number of commercial operations: (1) uranium mining; (2) milling of uranium into what is called "yellow cake" (U308); (3) conversion of the yellow cake into a gas, uranium hexachloride (UF6); (4) "enrichment" of the uranium hexachloride (UF6) into isotope U–235 atoms by a process of diffusion to raise the portion of fissionable U–235 from the 0.7 percent at which it occurs in nature to a range of 1 percent to 3 percent; (5) conversion of the resulting enriched gas into pellets that are placed in zirconium tubing to be used as fuel elements; and (6) the placing of these fuel elements into a nuclear reactor (Tremmel 5130–32).

Each of these operations is now performed by private enterprise, with the exception of the "enriching" process, which is performed

only by the Atomic Energy Commission. There are varying numbers of strong companies performing each of these operations, and other companies, including major oil companies, have indicated an intention to enter the nuclear energy field (Tremmel 5131–34, 5139).

Before 1965, only 2,000 megawatts of nuclear capacity had been ordered by utilities in the United States. By the end of 1968, there were 13 nuclear-fueled power plants with a generating capacity of about 3,000 megawatts in service, 44 nuclear plants with a capacity of about 33,000 megawatts under construction, and another 43 plants either contracted for or announced aggregating about 37,000 megawatts. Thus, by the end of 1968, about 73,000 megawatts of nuclear capacity were in operation or under construction or planned. (Tremmel 5108–09; Sporn 4518–20; RX 216–A.)

The following table (RX 188) sets forth the amount of fossil-fueled and nuclear generating capacity, respectively, in the years 1965 through 1968:

Summary of Announcements of New Steam-Electric Plant Additions

Announcements in	Fossil		Nuclear		Total
	Milli-watts	Percent	Milli-watts	Percent	Milli-watts
1965	[22] 15,928	73	6,009	27	21,937
1966	20,096	47	22,477	53	42,573
1967	32,320	55	26,460	45	58,780
1968	24,600	62	15,168	38	39,768
Total	92,944	57	70,114	43	163,058

[22] This figure corrected to conform to RX 216–A.

As the table shows, 43 percent of the generating capacity ordered by electric utilities in the United States in the 4 years 1965 through 1968 is to be fueled by nuclear energy.

The 163,000 megawatts of new generating capacity announced by the electric utility industry in the years 1965 through 1968 was equal to 60 percent of the total electric capacity existinng in the United States at the end of 1967, 85 years after the start of the electric power industry (Sporn 4518).

The 70,000 megawatts of nuclear capacity announced during this four-year period has provided a solid foundation for the nuclear power industry (Sporn 4519–21).

The average price of fuel consumed by electric utilities in the United States declined from 26.6 cents per million BTU in 1948 to 24.3 cents in 1955, climbed to a peak of 27.1 cents during the Suez crisis in 1956–1957, declined again to 25.2 cents in 1965, and rose slightly to 25.8 cents in 1967 (Sporn 4533).

In the 2-year interval between 1965 and 1967, the price of coal at the mine increased by 4 percent or 5 percent (Sporn 4559). The cost of coal to electric utilities increased in 1967 by 2 percent over 1966 (Sporn 4550; RX 192). These increases accounted in part for the electric utility industry's interest in nuclear energy (Sporn 4559–60).

As noted *supra* (p. 797), utilities carefully analyze the costs of competing fuels each time they select a fuel supplier for a new generating facility, and their decisions are based primarily on cost. It follows then that the utilities watch the development of commercial nuclear energy closely and may be expected to consider it at every point as an alternative to coal. (Sporn 4490–95, 4559–60, 4502–05; Corey 4726–31; Frisbee 5246–53; McGuire 4625–26, 4634–38; Naughton 3205–06; O'Brien 5289–92.)

By way of illustration, Commonwealth Edison and TVA, Peabody's 2 largest customers and 2 of the 3 largest consumers of coal in the country, have committed a total of over 10,00 megawatts of new capacity to nuclear energy. This capacity, if fueled by coal, would consume about 30 million tons of coal annually—an amount equal to 50 percent of Peabody's annual production [23] (Corey 4709–10). Pacific Gas & Electric, in San Francisco, has a small 68-megawatt nuclear unit in service and a 2,000-megawatt nuclear plant on order (RX 153–C), and it expects most of its future plants to be nuclear, with some additional gas units possible—it regards coal as having been overtaken by nuclear energy (Lee 1696–97; O'Brien 5302). Details respecting the present and future plans of these utilities, as well as other power producers, are set forth in RPF 195–207. It follows that Peabody's prices and profits have been directly affected by competition from nuclear energy (Mullins 3646), and its com-

[23] About 3,000 tons of coal per year for each megawatt of capacity are required to fuel a generating plant operated at normal loads. See Lee 1581 (the Mojave plant will total 1,510 megawatts and consume about 5 million tons of coal a year); Lee 1615 (55,000 megawatts consume about 150 million tons annually).

petition has similarly affected the prices of suppliers of competing fuels (Lee 1646–48).

3. *Other Competitive Factors*

No consideration of competition in the coal industry would be complete without reference to the fact (more fully documented in subsection H, *infra*) that numerous oil companies—in addition to those that have acquired coal companies—have already taken steps preparatory to entry into the coal industry.

Moreover, the sellers of competing fuels include many substantial and capable companies. Four of the 10 largest industrial corporations in the United States in terms of sales and assets, and 5 in terms of net income, are oil companies. Each of these companies—Standard Oil (New Jersey), Mobil Oil, Texaco, Gulf, and Standard Oil of California—has assets in excess of $4.5 billion and annual income in excess of $350 million. Eleven other oil companies are listed in the first 100 of "Fortune's 500." (CX 188; RX 168; RX 170 A–C; RX 171 A–B.)

Another factor to be taken into account is the number of substantial companies that have entered various areas of the nuclear industry, including General Electric, Westinghouse, Babcock& Wilcox, Combustion Engineering, and Gulf Oil (all reactor manufacturers) and Allied Chemical, Getty Oil, Atlantic Richfield, Kerr-McGee, and Standard Oil (New Jersey) (all engaged in various stages of the fuel manufacturing process). (Tremmel 5131–34, 5139.)

As indicated elsewhere, many of the large companies engaged in these other parts of the energy industry are also either in the coal business or soon will be (subsection H of Section V, *infra*).

G. THE FUTURE OF COAL

1. *Demand by Electric Utilities*

The competition that the sellers of coal face from the nuclear industry will further intensify in the future. Phillip Sporn, one of the nation's leading authorities on energy and the generation of electricity (Tr. 4484–4503; RX 187 A–C), estimates that nuclear energy, which accounted for 0.6 percent of all the primary energy consumed by electric utilities in 1966, will produce 34 percent of the electricity generated in the United States by 1987. Coal, meanwhile according to his projections, will decline from 55 percent of total

utility energy consumption in 1966 to 44 percent in 1987. The official projections of the Atomic Energy Commission, as testified to by Ernest Tremmel, Director of the AEC's division of industrial participation, are for an even more rapid rise in the relative position of nuclear energy. The AEC expects 25 percent of the electricity-generating capacity of the country to be nuclear-fueled by 1980, and predicts that nuclear power plants will generate 30 percent to 40 percent of the nation's electricity in that year. Mr. Sporn's projections beyond the year 1987 show a continuing decline in the relative use of coal by electric utilities. (RX 189, RX 217; Sporn 4521–25, 5843–44, 5858–60; Tremmel 5119, 5123, 5156.)

The predicted decline in the portion of electric utility demand for fuel that will be met by coal does not, however, mean that the coal industry is facing extinction or imminent collapse. The growth of the electric utility industry will be so great—Mr. Sporn predicts a quadrupling in size between 1966 and 1987—that the absolute amount of coal consumed in the generation of electricity should increase substantially at least to the year 2000.[24] Mr. Sporn projects a growth of coal usage for the generation of electricity to 755 million tons by the end of this century, compared to 272 million tons in 1967. (RX 189, RX 190, RX 148; Sporn 4522–25, 5836–37; Tremmel 5123, 5156.)

The development of nuclear energy as a fuel for the generation of electricity means that the coal industry will face ever increasing price competition in its selling efforts. Mr. Sporn stressed that his projections for a continued and substantial growth in the amount of coal consumed by electric utilities during the remainder of this century are based on his assumption that coal companies operating in a private enterprise economy must find some means through technological and commercial innovations to achieve continual cost reductions. (Sporn 4526.)

The technology of commercial nuclear energy is young and rapidly developing and promises to yield increasingly lower levels of cost.

[24] According to Mr. Sporn's projections, the amount of electricity generated in the United States will increase from about 1 trillion kilowatt hours in 1966 to more than 4 trillion kilowatt hours in 1987 and to 7 trillion kilowatt hours in the year 2000 (RX 189).

Both the Atomic Energy Commission and private companies, including nuclear reactor manufacturers and electric utilities themselves, are working on the development of more advanced reactors that will sharply reduce the fuel costs of nuclear generating facilities.

The breeder reactor, which the AEC expects to be commercially available in the 1980's, will manufacture more fuel than it consumes, rendering the cost of uranium almost irrelevant to final fuel costs and raising the prospect of limitless energy resources for the generation of electricity. (Sporn 4561–68, 5833; Tremmel 5130–43.)

The caveat suggested by complaint counsel—that the growth of nuclear power "is subject to substantial handicaps", particularly the problem of "thermal pollution" of streams and lakes (CPF 36)—is not to be lightly dismissed (Sporn 4556–57), but this is a factor taken into account by the witnesses who testified on the subject, and the inferences proposed to be drawn may be discounted as Cassandra prophecies.

The handicaps to the use of nuclear power to generate electricity are no more substantial than those to the use of coal. The air pollution problems created by the use of coal as a boiler fuel are well known (see, for example, Netschert 3955–58). Nuclear energy does not present air pollution problems, and more advanced nuclear reactors will produce no greater thermal pollution than fossil-fueled generating plants (Netschert 3959–60; Tremmel 5149; Sporn 5833). Even now, in those instances where thermal pollution poses a problem, cooling towers may be used to overcome the problem (Tremmel 5149). It appears that at present, neither coal nor nuclear energy has an advantage one over the other so far as problems of pollution are concerned (Tremmel 5126–28).

The statement that "logically" nuclear energy may be used only at locations adjacent to oceans or the Great Lakes (CPF 36) is not supported by the record. The nuclear plants of TVA—which has made probably the largest commitment to nuclear energy of any utility in the country (RX 153–C; Corey 4709–10)—do not fit into either category, nor do the locations of other existing or planned nuclear plants (RX 153–B; Tremmel 5149–50; Sporn 5831).

The record does not permit the inference, urged by complaint counsel, that the relative abscence of nuclear plants in the Rocky Mountain States is due to the allegedly "arid" condition of those states. In Idaho, for example, not only is water plentiful but all electric utility generation is by hydropower (Lee 1568–69; Miller 3873). Moreover, elsewhere in their proposed findings (CPF–Br.

pp. 53–54) complaint counsel inconsistently argue that there are large quantities of water available for public utility use in the Mountain States.

In any event, even the present absence of nuclear plants in the Rocky Mountain States other than Colorado does not mean that nuclear energy is not competing with coal from those states. Suppliers of coal from the Rocky Mountain area compete with nuclear energy as a source of fuel for plants to serve California and the Pacific Northwest States (see RPF 203, 204, 206; Netschert 4101–02). Moreover, companies such as Utah Power & Light are keeping "fully abreast of the rapidly expanding knowledge and technology with respect to generation from nuclear fuels" and the possible use of nuclear fuels despite the substantial reserves of fossil fuels (RX 104, p. 6).

The long-term gains envisioned for nuclear energy in competition with coal and other fossil-fuels are regarded as most probable by those knowledgeable about the development of the energy industry because, as a scientific matter, nuclear energy clearly has the potential for much lower costs than other fuels. As the technology of the nuclear industry develops and as further basic scientific breakthroughs are made in the design of reactors (particularly the development of breeder reactors) the cost of electricity from nuclear energy will constantly decline. (Sporn 4549–52, 4555–68, 5832–35, 5838–41, 5869–72, 5874–75; Tremmel 5115–17, 5128–30, 5145–47.) The inevitable effect of this reduction in cost will be the displacement of the other fuels, in particular coal, from an ever enlarging segment of the utility demand (Reeves 1259–60, 1284–87; Lee 1614–16; Mullins 3570–74, 3642–46; Netschert 3936–39, 3946–47; Sporn 4521–28, 4544–46; Tremmel 5117–30, 5145–47, 5150–57).

Coincident with this long-term diminution in the demand for coal for its present principal market, however, there is emerging the prospect of a huge new market—the use of coal for the production of synthetic oil and gas. That subject is considered in the following subsection.

2. *Coal Conversion to Synthetic Fuels*

A basic technology for the conversion of coal to synthetic oil and gas has been known for more than 50 years (Phelps 3349); Larson 5748). At present, however, neither the production of synthetic crude oil ("liquefaction") nor the production of synthetic pipeline gas ("gasification") is possible on a commercially com-

petitive basis, and research and development are continuing on both processes. Consolidation Coal, Standard Oil (Ohio), Standard Oil of California, Atlantic Richfield, Pittsburg & Midway, and Standard Oil (New Jersey) are among the firms engaged in development work on either liquefaction or gasification (Netschert 3954, 4068–75; Larson 5741–51).

The Office of Coal Research in the Department of the Interior funds research projects relating to development of a commercial technology for liquefaction and gasification. Since it was founded in 1961, the Office of Coal Research has spent about $40 million on work on coal conversion, including work contracted to be performed by some of the firms listed *supra* (Larson 5740–41, 5749, 5761–63).

Successful production of synthetic fuels made from coal will involve the use of the technology of petroleum refining, and the marketing of the resulting products will involve distribution to consumers already served by the oil industry. Both the basic technology of coal conversion itself and the expertise needed for refining and distributing the resulting synthetic fuels are unrelated to the coal business in its present form. Because of their long interest in hydrocarbon research and in the technology needed for conversion, and because they already have the necessary distribution systems and marketing skills, oil companies have a much greater capability than existing coal producers (not affiliated with oil companies) to produce and market synthetic fuels from coals (Fox 6171–73).

The Office of Coal Research expects that a commercial liquefaction plant will require a capital investment of between $250 million and $300 million; such a plant would consume about $3.5 million tons of coal per year and produce over 30,000 barrels of crude oil per day (Larson 5740–41, 5749, 5761–63). Even larger synthetic fuel plants are projected, which would require between 10 million and 20 million tons of coal per year (J. P. Weir 4357; Robinson 4401), or between 400 million and 600 million tons of coal over the useful lives of the plants (J. P. Weir 4357; see also Fox 6132).

Liquefaction is likely to become commercial in the decade of the 1970's, and gasification on a commercial basis should occur shortly thereafter (Netschert 4069, 4074; Larson 5751). The production of synthetic fuels may rival, or even surpass, the generation of electricity as a source of demand for coal (Fox 6132–33).

H. POTENTIAL ENTRANTS INTO THE PRODUCTION AND SALE OF COAL

Oil companies, and natural gas companies as well, have special incentives and capabilities for entering the coal business. They are

already engaged in the energy industry in their traditional businesses, and coal offers them an opportunity for expansion within the energy industry—as does uranium mining, which many of the major oil companies have also started to enter. In addition, the only prospective source of demand for coal that may rival its use as fuel for the electric utility industry is its projected use for conversion into synthetic petroleum products. Various experts testified that liquefaction of coal to produce crude oil, or even gasoline, and gasification of coal to produce pipeline-quality gas should be commercial within the next 5 to 15 years. When those forecasts eventuate, coal reserves would become the commercial equivalent of oil and gas reserves. (Netschert 4068–77; Sporn 5841–46; Fox 6169–74, 6222–26; Larson 5751–52; J. Weir, 4341.)

The major oil companies and natural gas companies not only have these special incentives, but, as noted *supra*, they also have special capabilities. First, they are in a unique position to engage in the production of synthetic fuels from coal by reason of their capabilities in the basic science of hydrocarbons and the technology of refining petroleum products. Second, they already have the marketing personnel and organization to sell the synthetic fuels to be derived from coal—that is, oil products and natural gas. Third, to the extent that they may sell coal, instead of converting it to synthetic products, they are generally equipped to engage in such sales to significant consumers by reason of their years of business experience in selling energy in the form of oil and gas (Fox 6169–74, 6222–26).

The degree of their capability in coal mining is not specifically shown in the record. Although several oil companies have entered the coal industry through the acquisition of existing coal companies, two oil companies have undertaken coal mining on a de novo basis.

Gulf Oil, Continental Oil, Standard Oil Company (Ohio), and Occidental Petroleum, for example, have acquired coal companies ranking among the ten leading producers (RX 170–A), and Belco Petroleum Corp. has also acquired a coal company (Robinson 4400). Sunray DX, Ashland, Atlantic Richfield, and Kerr-McGee each had discussions with Peabody regarding possible acquisition (Mullins 3590–94).

Standard Oil Company (New Jersey), through one or more subsidiaries, including Humble Oil & Refining Company, has become a large holder of coal reserves in the United States, particularly in the Midwest and the West (Mullins 3601, 3649; Kelce 3690; Ball 4286–87; Robinson 4400–01). Recently, it entered into a long-term coal supply contract with Commonwealth Edison in Illinois, calling for

the delivery of about 3 million tons annually starting late in 1970, and planned to open a mine for this purpose (Corey 4724–25; Netschert 4060). Humble Oil executed a contract with the Bureau of Reclamation, United States Department of the Interior, for 50,000 acre-feet of water rights in Wyoming to be used in connection with "coal beneficiation" and has applied for 23,500 acre-feet in Wyoming to be used in connection with oil resource development (CX 208).

Kerr-McGee Corporation—which dropped the word "oil" from its corporate name to reflect the "total energy concept" as it expanded into uranium and coal—has acquired 100 million tons of coking coal reserves and over 1 billion tons of steam coal reserves. After years of preparatory work, it was planning to open a coking coal mine in 1969 and to expand the mine by 1971. It also had a long-range concept for developing its steam coal reserves. (Gossard 5880–89, 5901–06). In connection with its large steam coal reserves in Montana, Kerr-McGee executed a contract with the Bureau of Reclamation for 50,000 acre-feet of water (CX 208).

At least two other oil companies have indicated their intention to open coal mines and commence production on their reserves. One has been in active negotiations, for about a year, to supply 1 million or 2 million tons of coal annually for a new generating plant in the West, and it expected to enter production at the end of 1969 or the beginning of 1970. The other company is considering entering steam coal production in the East and in the West, but its first production probably will be in the East. At the time of hearing, it was negotiating to supply coal to a generating plant to be constructed 5 to 10 years from now. (Robinson 4444–45, 4452, 4453–56.)

Many other oil companies have acquired coal reserves, including Atlantic Richfield, Shell, Sinclair, Sunray DX, and Diamond Shamrock (Sporn 5841–43; Netschert 4059–61, 4263; RX 184–D).

Atlantic Richfield owns extensive reserves in the Kaiparowits field in southern Utah and has expended over $2 million on exploration work there (Mullins 3621). Sun Oil Company has applied for a lease of 40,000 acres of coal land in the Kaiparowits field, and its application is pending before the Department of the Interior (Nelson 2212–13).

Atlantic Richfield and Sun have taken steps to develop coal elsewhere in the West. They have made application to the Bureau of Reclamation for 50,000 acre-feet and 35,000 acre-feet of water in Wyoming to be used in connection with coal beneficiation. Shell also has executed a contract for 28,000 acre-feet of water in Montana to be used in connection with coal beneficiation (CX 208).

Nearly all the leading oil companies in the United States—including Standard Oil Company (New Jersey), Texaco, Shell, Standard Oil of California, Standard Oil Company (Ohio), Atlantic Richfield, Ashland, and Gulf—have inquired into the research activities of the Office of Coal Research, United States Department of the Interior, relating to gasification and liquefaction of coal (Larson 5757).

Eleven of the 15 largest oil companies in the United States have expended funds for research, study, or development in the conversion of coal to synthetic fuels. During the years 1963 through 1967, their expenditures totaled over $14 million. (RX 184 A–F.)

Some of the leading natural gas pipeline companies have manifested interest in entering the coal business. El Paso Natural Gas, which holds coal reserves in New Mexico (Phelps 3487; Christensen 5195), has applied to the Bureau of Reclamation for 27,500 acre-feet of water in New Mexico to be used in connection with a coal-fueled electric generating plant (CX 208). Texas Eastern Transmission, which had discussions about acquisition with Peabody (Mullins 3593–94), and Colorado Interstate have expressed interest in the activities of the Office of Coal Research (Larson 5757–58); and the Institute of Gas Technology, the research arm of the American Gas Association, is conducting a major research project relating to gasification of coal under contract with the Office of Coal Research (Larson 5746).

A number of electric utilities presently own substantial coal reserves, and some produce coal for their own consumption (RX 171 A–B, RX 155 A–M; Frisbee 5242–46).

Some railroads, particularly in the West, own very substantial coal reserves; for example, Northern Pacific owns coal reserves in three western states which are estimated to aggregate almost 8 billion tons (RX 228 A–E).

However, respondent's economic expert ranked both the utilities and the railroads relatively low on his scale of potential entrants, albeit higher than Kennecott (Fox 6176–77).

In addition to all these potential entrants, existing coal companies operating in one or more areas of the United States have the incentive and capabilities to expand into other areas where they are not now operating, for example, Pittsburg & Midway (Phelps 3331–32).

Thus, there is no dearth of potential entrants into the coal industry—they may be "numbered in the dozens" (Fox 6177)—but whether actual entry will be on a de novo basis or by acquisition is unclear. Moreover, an assessment of the future course of competition in coal must take into account the fact that, when liquefaction and gasifica-

tion of coal become commercially feasible, the coal reserves in the hands of the oil and gas companies will be subject to captive use for the production of synthetic oil and gas products in possible preemption of other uses.

VI. Kennecott as a Potential Entrant Into the Coal Industry

A. INTRODUCTION

The threshold issue is whether Kennecott was, in fact, a potential entrant into the coal business. To answer this question, it is necessary to consider a variety of factors, including respondent's incentives for entry, its capability of entry, and its intent regarding entry, as shown by what it said and did. Each of these factors will be examined in this Section VI.

B. INCENTIVES FOR DIVERSIFICATION

Both parties agree, and the record establishes, that before Kennecott's acquisition of Peabody, it possessed the incentive, the capability, and the intent to undertake a substantial program of diversification. It is likewise undisputed that as early as 1963, coal was one of the industries on Kennecott's list of areas of possible diversification. In this subsection, we shall explore first the reasons underlying Kennecott's interest in diversification.

The copper industry is relatively unstable because of various economic and political factors. Copper moves freely in world markets, and copper prices vary widely in times of surplus and short supply, thus contributing to the cyclical earnings reported by Kennecott during the past 20 years (RPF 8).

Fluctuations in copper sales and profits are also caused in part by the periodic strikes which afflict the copper industry for extended periods of time (RPF 9–10).

Another important element of uncertainty in the copper industry results from the fact that most of the copper produced outside the United States comes from developing nations, where political conditions are unstable and where "nationalization," in whole or in part, of the copper mines is actual or is threatened (RPF 11).

The unavailability of copper during prolonged periods of shutdown encourages copper customers to switch to substitute products, such as aluminum and plastics. Kennecott and copper producers are under pressure to hold prices down to avoid the dangers of substitution. (RPF 12.)

Although the United States produces and consumes more copper

than any other nation, it is not self-sufficient in copper so it must import substantial amounts. (C. D. Michaelson 5428.)

In spite of extensive exploration for copper in this country, there have been no major copper discoveries for the last 50 years in the United States. It is estimated that 80 percent of the copper in this country comes from mines that are more than 50 years old. (C. D. Michaelson 5426–27.)

Kennecott has conducted an extensive search for new copper deposits. Its exploration department has an annual budget averaging $7 million a year. Although it has been conducting exploration on this scale for about 20 years, it has not discovered during that period any major copper deposits. (C. D. Michaelson 5427–28.) Only two copper deposits have been found by Kennecott that, in its judgment, might possibly warrant the opening of a mine, but neither of them is as large as the smallest of the four deposits now mined by Kennecott in the United States. Only one of these deposits will probably be mined; and although it was discovered 6 or 7 years ago and funds were appropriated for its opening at least 3 years ago, it is not yet open for mining. (C. D. Michaelson 5428, 5445–46, 5550–54, 5675.)

Kennecott does not believe it would be worthwhile to increase the level of its expenditures for copper exploration (C. D. Michaelson 5433–34).

Unsuccessful in finding new copper deposits, Kennecott sought several years ago to expand its operations into the fabricating end of the copper business. Its two principal competitors, the Phelps Dodge Corporation and the Anaconda Company, both produce copper wire and cable. In 1958, Kennecott purchased a wire and cable company, The Okonite Company. However, after legal proceedings,[25] Kennecott, in 1966, was required to divest itself of this company. It sold The Okonite Company to Ling-Temco-Vought, Inc., for $30 million. This resulted in a net loss to Kennecott of $6,596,031. Kennecott was not allowed to retain the small wire and cable company, Kennecott Wire and Cable, which it had operated for many years and had consolidated into Okonite. (C. D. Michaelson 5434–36; Milliken 6306; CX 6, p. 15; CX 7, pp. 4, 26.)

Kennecott's share of the copper market in the United States has declined significantly since the end of World War II, as has its share of the world copper market (Milliken 6304; CX 11, p. 1).

Frustrated in its attempt to expand its copper operations over a period of many years and faced with mining a constantly decreasing

[25] *United States* v. *Kennecott Copper Corp.*, 231 F. Supp. 95 (S.D.N.Y. 1964), *aff'd per curiam*, 381 U.S. 414 (1965).

grade of copper ore, the company was concerned that it was engaged in a self-liquidation process with a resultant generation of huge cash surplus (Milliken 6304; C. D. Michaelson 5444–45, 5605; CX 9, p. 23).

Cash has also been generated by the sale of various company assets. In 1966 Kennecott not only sold Okonite *(supra)*, but it also sold approximately half of its Kaiser Aluminum and Chemical Corporation common stock, and it planned to sell the rest, with an aggregate realization of around $100 million. (Milliken 6306–07; CX 8, pp. 22, 25.)

On April 13, 1967, Kennecott sold a 51 percent interest in its El Teniente holdings to an agency of the Chilean Government for $80 million represented by 5¾ percent notes receivable in various amounts through July 1, 1970. The amounts received on the principal of these notes are to be concurrently loaned to the Chilean corporation on 5¾ percent notes receivable in 30 semi-annual installments commencing December 31, 1971. (CX 9, p. 26.)

When Frank R. Milliken became president and chief executive officer of Kennecott in 1961, he was confronted with the problem of an excess of cash funds. After careful study, it became evident that there were no new major expansions in the copper business, and that, in fact, the company's position might tend to decline. In addition, since Kennecott's copper operations were depleting its mining assets, it became evident that a new business was needed to insure the continuity of the company (Milliken 6297, 6303–04).

On April 13, 1963, Edmond Guggenheim, who had formerly been a director of Kennecott for a number of years, sent a letter to Mr. Milliken and other members of the board of directors, urging Kennecott to diversify into areas outside of the copper industry. In his letter, he pointed out that Kennecott's exploration efforts had not been productive and its attempts to expand into other aspects of the copper industry had not proven fruitful. In addition, he indicated that Kennecott was now in a position to embark on a diversification in the order of $200 million. He said that he did not want to see Kennecott become a "liquidating company." Among other things, he referred to "the possibility that some of the Western coal deposits might become of interest to Kennecott * * *. (RX 237 A–B; Milliken 6307–08, 6311; C. D. Michaelson 5456–57.)

Earlier, Mr. Guggenheim had written a letter recommending that the company consider diversifying into the oil industry. The board of directors discussed this letter at a meeting in November 1962 and reached the consensus that Kennecott "should be on the lookout for the acquisition of a good oil company as a medium of entering

into the oil and gas business, but should not seek such a venture actively." (RX 236; Milliken 6309–10.)

Against this background, Kennecott decided in the early 1960's that it must use its accumulated and growing cash reserve to diversify (Milliken 6303–06, 6312–13; C. D. Michaelson 5453). The cash on hand and the cash that would be generated in future years was anticipated to amount to between $500 million and $1 billion [26] (Milliken 6314–15; C. D. Michaelson 5454).

The diversification problem was a basic responsibility of Kennecott's president (Milliken 6305–06). In considering diversification, Kennecott had the following goals:

(a) A substantial business investment opportunity—that is, in the magnitude of hundreds of millions of dollars. Kennecott was not interested in a small diversification, such as one requiring from $5 million to $30 million nor was it interested in an enterprise that would absorb relatively small amounts of cash over an extended period of time. (Milliken 6312–13, 6315, 6320, 6328, 6367; Fisher 4657–58; C. D. Michaelson 5453–54, 5460–61, 5606; RX 237 A–B.)

(b) A significant return on its investment that would not be delayed (Milliken 6312, 6367–68; C. D. Michaelson 5454–56).

(c) A business with growth potential and without the cyclical nature of earnings from the copper business (Milliken 6315, 6350–51, 6367–68).

(d) This new enterprise to be related to the basic management concepts of Kennecott. Kennecott was interested in diversifying into a business, such as one of the extractive industries, with basic management problems which the management of Kennecott could understand better than the problems of unrelated industries. Kennecott was not interested in a business with operations essentially different from the company's operations, such as the retail field, the department store business, or the aerospace industry. (Milliken 6313–14; C. D. Michaelson 5454, 5458–59, 5606–07.)

Based upon these criteria, there were a number of industries which might be considered as possible areas of diversification by Kennecott, and the company decided to consider initially oil, aluminum, coal, and fertilizer as possibilities (Milliken 6319; CX 11, p. 3).

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[26] This is not to suggest that at any point Kennecott had $700 million, or any sum approaching that amount, lying idle in a bank account or invested in government securities. As of July 15, 1966, Kennecott "had available in cash or securities approximately $150 million; up to $75 million net from the sale of Kaiser stock could be anticipated; its additional cash flow during the next 11 years was then estimated at $467 million; and this made a total of approximately $700 million whose productive investment had to be planned." (CX 2–N.)

C. CONSIDERATION OF DIVERSIFICATION INTO OIL

The management of Kennecott looked first at the oil industry because it felt that it had more general familiarity with this strong, growing industry—an industry that was earning a higher rate of return on invested capital than any of the other industries under consideration—and therefore it would be in a better position to decide whether to recommend to the Board of Directors Kennecott's entry into the oil industry (Milliken 6313–14, 6327; C. D. Michaelson 5459).

1. *Employment of Oil Expert*

Kennecott did not have any personnel with expertise in the oil industry; therefore, during the summer of 1963, it retained the management consulting firm of Booz, Allen & Hamilton, Inc., to recommend an expert who could aid it in evaluating the oil industry and in determining whether Kennecott should enter that industry and, if so, how to go about it—an expert who could act, if necessary, as Kennecott's chief operating executive for oil (Fisher 4654–55; Milliken 6327, 6329–30; Harman 5698–99; C. D. Michaelson 5459–60).

On the basis of the Booz, Allen recommendation, Kennecott hired Gordon Fisher on November 1, 1963, as an assistant to Kennecott's president (Fisher 4654–56; Harman 5698-99; Milliken 6328–30; C. D. Michaelson 5459–60; CX 12–A). Mr. Fisher was an experienced oil man who had worked for a number of oil companies, including Gulf Oil, Phillips Petroleum, and Plymouth Oil (Fisher 4652–53). When Mr. Fisher was hired, Kennecott had not made any decision to diversify into oil or gas (Milliken 6327–28; C. D. Michaelson 5460; Harman 5698–99).

Mr. Milliken and Mr. Fisher were of the opinion that Kennecott should not attempt to enter the oil business "on a grass roots basis"—by exploring for reserves, building a refinery, etc.—because oil and gas reserves of the right kind and quality were difficult to find and to acquire; and Kennecott had no expertise in this area. Kennecott had neither the organization nor the personnel to conduct satisfactory explorations in oil or gas. Moreover, an exploration operation would be insignificant in size and most likely of low profitability. Mr. Milliken told Mr. Fisher that Kennecott was not interested in slowly building up an oil business with losses for along period of time. Mr. Milliken emphasized that Kennecott was interested in a substantial acquisition that would amount to several hundred million dollars in order to solve its cash surplus problem. (Fisher 4656–58, 4673–74; Milliken 6320, 6328.)

2. *The Report on Oil*

Mr. Fisher's first task was to analyze the oil industry in a broad sense with respect to how it would fit into Kennecott, to determine what the impact on Kennecott would be, and to prepare a detailed report. He spent about 7 months of concentrated work on a report entitled "Investigation of Entry Into Oil Industry," dated July 6, 1964. (CX 11; Fisher 4659–60, 4683; Milliken 6318–19, 6329.)

Mr. Milliken worked with Mr. Fisher in drafting the first section of the report (Milliken 6318–19), because, in addition to the segment covering the oil industry, he wanted the board to be fully advised with respect to other thoughts that management had had with respect to the subject of diversification (Fisher 4662). The part entitled "Outlook for Kennecott," notes that there is little likelihood that Kennecott can expand its copper operations, that its "rate of discovery of new economic copper ore bodies has been for a number of years short of replacing [its] production," and that "production capacity this year is less than it was twenty years ago." With respect to Kennecott's relative position in the industry, the report points out that Kennecott produced and sold 22 percent of the free world's copper in 1944, whereas it sold only 13 percent in 1963. The report also notes that although in 1943 Kennecott was the 8th largest industrial corporation in the United States in terms of net income, it had slipped to 43rd in 1963. (CX 11, p. 1.)

The report further points out that the fabrication of copper and the exploration for copper and other minerals by Kennecott would use very little of the cash generated by the company. Because of these developments, it was anticipated that in 1967 Kennecott's "cash flow will exceed . . . expenditures and dividends by over $22,000,000 and from 1969 through 1983 will exceed them by nearly $24,000,000 per year." Based on these and other calculations, the report projected that "Kennecott's cash position at the end of 1983 would be $487,-219,000." On the basis of these facts as to Kennecott's past development and future outlook, it was concluded that the "investigation of diversification seems a logical step to take in attempting to solve" the problems concerning the "long term perpetuation of Kennecott" and the "short term wise use of excess funds being generated." (CX 11, pp. 1–2.)

The next part of the report, headed "General Study of Diversification," discusses the type of diversification that should be considered by Kennecott. It states "that diversification should be into a business that has a relatively high rate of return on investment" and one that "has had and probably will continue to have long-range, relatively

steady growth performance." (CX 11, pp. 2–3.) In addition, "it should be one somewhat related in basic management concepts to those with which Kennecott is acquainted." (CX 11, pp. 3, 4.)

The report states that another extractive industry would fulfill some of these criteria and that there are few industries that would appear to meet these criteria better than the oil industry (CX 11, p. 3).

Under the heading, "General Investigation of the Oil Industry," the report details the information gathered by Mr. Fisher with respect to Kennecott's possible entry into the oil industry.

With regard to the critical factor of size of the oil company to be acquired, the report stated:

> There is another consideration which must be given to the whole matter of an oil company acquisition, and it has to do with the size of the oil company to be acquired. Obviously, it must not be a size so large that it "swallows" Kennecott or that it would put Kennecott's "borrowing power" in jeopardy. On the other hand, if it is quite small it will be of little advantage to Kennecott's shareholders and will require disproportionate Kennecott Board of Directors and Management attention for the amount Kennecott will realize from it financially. Even a very small company would require close to the same amount of Management time and effort as a medium-size company. If it is very small, it probably should not be an integrated company because it would be "spread too thin" for its financial capabilities. Furthermore, a very small company would not give Kennecott anywhere near the real solution to its perpetuation or to its future cash flow problems as would a medium-size [oil] company. (CX 11, pp. 9–10.)

The report concludes that an effective course of action for Kennecott to consider is to attempt to acquire a "medium-size" oil company, which would be desirable for the following reasons:

> . . . Its results are financially attractive for Kennecott and for its shareholders; it will not disproportionately involve Board and Management efforts; it is within the range of size of debt that Kennecott can very comfortably handle; it is of a size that should impress the "stock market" public favorably and it is of a size that rather effectively and automatically solves for a number of years the basic perpetuation and cash flow problems discussed at the outset (CX 11, p. 12).

3. *Acquisition Efforts*

The oil report was circulated to the members of the executive committee of the board of directors, and thereafter at a meeting on July 13, 1964, the executive committee unanimously agreed in principle to have Kennecott consider the acquisition of an oil company of a size not to exceed $700 million in cost and directed that a copy of the report be sent to each director in preparation for the next Board

meeting (CX 12–A–B; Fisher 4663; Milliken 6326; C. D. Michaelson 5462). At a meeting of the board of directors on July 17, 1964, Mr. Milliken "outlined the objectives as twofold: Kennecott has a genuine need for diversification, first, in order to secure the long-term perpetuation of the corporation, and, second, to make the most profitable use of funds expected to be generated during the coming years." The board of directors approved the recommendation of the executive committee and authorized the president and other proper officers to undertake negotiations to acquire an oil company of the size indicated (CX 13)

Thereafter, Mr. Fisher made a preliminary investigation of nearly every oil company in the United States with assets of between $250 million and $1.5 billion (Fisher 4696). In considering the purchase of an oil company costing up to $700 million, Kennecott contemplated making the purchase under a production-payment arrangement that would have required a cash payment between $200 million and $250 million (Fisher 4688). For over a year Kennecott considered, in particular, about a dozen medium-size oil companies (Fisher 4664–68). It held meetings and negotiations with a few of these companies, but for various reasons none of these discussions proved fruitful (Fisher 4664–68; Milliken 6330–32).

The search for an oil company tapered off in the second half of 1965 when Kennecott ran out of oil-company prospects (Milliken 6630–32; Fisher 4665–68, 4694–98). While discussions with two oil companies extended into the early part of 1966, Mr. Milliken had concluded in late 1965 that diversification into oil would not be possible (Milliken 6331–32; Fisher 4694–98).

D. CONSIDERATION OF DIVERSIFICATION INTO COAL

1. *Preliminary Steps*

Complaint counsel concede that there is no evidence in the record that Kennecott ever investigated the possibility of purchasing coal reserves or operating a coal mine for any purpose before April 1963 (CPF 142). The first specific record reference to its possible interest in coal appears to be a letter dated April 13, 1963 to Frank R. Milliken, president of Kennecott, from Edmond Guggenheim, a former member of Kennecott's board of directors, calling attention to Kennecott's need for diversification and suggesting "the possibility that some of the Western coal deposits might become of interest to Kennecott" (RX 237–A). Mr. Guggenheim was a member of the family that was instrumental in creating Kennecott; he and his

family were important stockholders; and he was "held in high respect" by the board of directors (C. D. Michaelson 5456–57; Milliken 6307–08).

Either as a result of the Guggenheim letter or by coincidence, it was about this time that Kennecott's management undertook to become "educated" about coal in connection with the need for diversification (Milliken 6374–78; C. D. Michaelson 5466, 556).

During the period from early 1963 through late 1965, when diversification into oil was under active consideration, Kennecott's activities with respect to possible diversification into other product lines were essentially limited to gathering background information. (Activities relating to the Knight-Ideal project are in a separate category and their significance is considered *infra.*) Mr. Milliken testified that he and the men who reported to him spent relatively insignificant amounts of time on the possibilities of diversifying into aluminum, iron mining, coal, cement, refractory metals, and fertilizers. They limited their consideration of these areas mainly to gathering basic educational materials and to keeping up on news and developments, in contrast to the thorough and detailed investigation of entry into the oil industry. (Milliken 6323–26, 6381–85; see CX 11, pp. 2–3.)

As far as this record shows, neither Mr. Milliken nor anyone else in Kennecott's top management had more than a general familiarity with the coal industry. Kennecott had no experience with either the technology of the industry or with its exploration, mining, marketing, or management techniques. (Milliken 6319–20, 6324–26, 6332; C. D. Michaelson 5469.)

2. *Purchase of the Knight Ideal Coal Reserves*

April 1963 was also the time when corporate activities began that eventuated in Kennecott's purchase in July 1965 of coal reserves in Utah from the Knight-Ideal Coal Company.

The circumstances surrounding the Knight-Ideal transaction in relation to Kennecott's interest in diversification is the "heart" of complaint counsel's case (CPF–Br. p. 64). The next subsection will examine the steps leading up to the Knight-Ideal purchase, with emphasis on the position taken by the Western Mining Divisions ("WMD") on the subject of a coal diversification study. Subsequent subsections will consider the relationship of the Knight-Ideal project to Kennecott's fuel needs and to Kennecott's possible entry into the commercial coal business. The actions and intent of Kennecott's management and its board of directors and various related activities will also be covered.

a. *Relationship to Diversification*

The steps leading up to the Knight Ideal transaction in relation to diversification were substantially as follows:

Shortly after receipt of the Guggenheim letter (but not necessarily as a result thereof), C. D. Michaelson, Kennecott's vice president for mining, wrote to J. C. Kinnear, Jr., general manager of WMD, in which he referred to a previous discussion of "the advisability of conducting a study on the possibility of coal operations in the West" (CX 14). The Michaelson-Kinnear conversation in New York apparently had been within a week before Mr. Michaelson's letter of April 16, 1963 (CX 14). According to the participants, the discussion amounted to no more than Mr. Michaelson's telling Mr. Kinnear that he ought to take a look at the coal business. (Kinnear 1898, 2015–18; C. D. Michaelson 5569.)

In CX 14, Mr. Michaelson suggested that "as a preliminary," Mr. Kinnear might consult with Paul Shields, a coal man in Utah, or some other person competent in the coal area.

At that time WMD had general management responsibility for the four western copper mines, and it was trying to find a lower-cost fuel for the Utah copper operations (Kinnear 1825, 1898–99, 1902).

However, C. D. Michaelson was not referring to a captive coal operation for internal fuel needs. He suggested that Mr. Kinnear's investigation "should be along the line of a coal mine with a pit head power plant of the general style of the Four Corners operation of Utah Construction," [27] and he mentioned "the possibility of special coals such as metallurgical or coals that could be delivered to a market at a price superior to other mines." (CX 14.)

Later in April, Mr. Shields was hired by Mr. Kinnear as a part-time coal consultant, but he limited his activities almost entirely to an investigation of coal properties in Carbon County, Utah, that might be available for use as a source of coal for the fuel requirements of the Utah Copper and the Nevada Mines Divisions and possibly for outside sales to reduce the unit costs of a captive operation (Kinnear 1900–03, 1926–27, 2021–22, 2032–33; CX 15, CX 16 A–B, CX 17, CX18–A, CX 18–H; Shields 1337–40, 1378, 1381–83, 1393; S. D. Michaelson 5020–21, 5028–29; RX 54, RX 55 A–B).

[27] The Four Corners operation of Utah Construction provides coal for a large electrical generating plant near Farmington, New Mexico. It is the largest coal mine west of the Mississippi River, and when full production is reached, it will be the largest coal mine in the United States (Reeves 1215–16). The extent of Mr. Michaelson's knowledge as of April 1963, concerning the size of the Four Corners operation is not shown by the record.

On July 15, 1963, C. D. Michaelson critically noted that he was under the impression that Mr. Kinnear was "localizing" the inquiry to the Utah area and "restricting" the investigation to the coal requirements of the Utah Copper Division and the Nevada Mines Division, and he urged Mr. Kinnear to broaden the coal study being conducted by Mr. Shields. He asked Mr. Kinnear to "bear in mind that we are interested in a comprehensive study of the coal potential in the entire West and possibly in the entire United States," with "first efforts" to be concentrated on the areas west of the Mississippi River. He noted that "the interest in coal is great" and requested frequent progress reports. He concluded with a suggestion that Mr. Shields check on a Texas coal and oil company that was reported to be for sale. (CX 19; C. D. Michaelson 5466–67; Kinnear 1907–08.)

Thus, C. D. Michaelson made it clear in his letter in July 1963, as he did in his testimony in May 1969 (Tr. 5468), that the scope of the WMD study was not as broad as he wanted.

Mr. Kinnear answered by letter dated July 25, 1963 (CX 21 A–B), the same day on which he forwarded another letter in the form of a report (CX 20 A–G) to which was attached the Shields study of July 8, 1963 (CX 18 A–I). Mr. Kinnear reiterated his concept of his assignment as involving what he considered "an initial coal venture" whose essential basis was the captive fuel requirements for the Utah Copper and Nevada Mines Divisions. These, he said, would provide "an assured return of capital, plus moderate earnings," even if the estimated "outside sales potential could not be realized." He also expressed in this letter strong doubts that "sufficiently conclusive and convincing data . . . to support a management decision" could be obtained from a market study of long-range coal sales potential or a study "to subsequently locate coal reserves to satisfy that potential."

Accordingly, he recommended the preferable approach of a local coal operation based on WMD's own captive fuel needs, with the possibility of later expansion into other areas. (CX 21 A–B; Kinnear 1908–10; C. D. Michaelson 5467–68; S. D. Michaelson 5032–34.)

Mr. C. D. Michaelson remained dissatisfied, and he called Mr. Kinnear on August 30, 1963, and told him so. This appears in Mr. Kinnear's report of September 6, 1963 (CX 23 A–B). There, after referring to his "preliminary determination of the feasibility of a Kennecott coal operation" based on Mr. Shields' study of two Utah properties "both with and without outside sales," Mr. Kinnear stated:

Further as discussed in your phone call of August 30th, I will *now* broaden and enlarge the scope of this investigation to determine what properties might be acquired to meet special markets and/or the needs of a large thermal plant. [Emphasis supplied.]

But this statement of a broadened and enlarged scope of investigation still did not satisfy C. D. Michaelson, and it appears that he again said so. Mr. Kinnear's next monthly report dated October 4, 1963, states:

My letter report of July 25, 1963 covering the feasibility of an initial Kennecott coal operation in the Carbon County, Utah area was to comply with *our understanding* of your original request for a feasibility study on "coal operations in the West." *Acting on your further and recent comments to increase the scope to include national and possibly international markets, we are now outlining the alternate ways to proceed with the study on this vastly increased basis.* Our recommendations will be forwarded to you next week. [CX 24; emphasis supplied.]

Contemporaneous documents thus show that it was not until October 1963 that Mr. Kinnear addressed himself to the question of the preparation of a broad-scope diversification study. However, some two weeks later, on October 22, 1963, Mr. Kinnear wrote to C. D. Michaelson (CX 25 A–B) and told him that he did not have the knowledge or personnel to do it.

Mr. Kinnear pointed out "that neither our present personnel nor any outside consulting firms known to us could provide the kind of long-range market and evaluation study which would make us feel sufficiently certain of the potential of the coal business to justify recommending a major capital commitment. . . ." He then suggested that if Kennecott wanted to become "a major coal producer in the proximate future," it should acquire a major coal company "with good reserves, having low operating cost potential, and with an effective marketing organization." If that were not considered desirable, he said, then

. . . the alternate would be to locate and engage a broadly experienced coal operating and marketing executive to conduct and supervise an exhaustive study of the western U.S., national U. S. and international potential coal markets. A study of the type envisioned would take considerable time and certainly require some additional staff help.

Pointing to the uncertainties of such a long-range study, Mr. Kinnear asked for a conference with C. D. Michaelson "before we are asked to proceed further with a broad-scope coal operation." (CX 25 A–B.)

In his subsequent monthly reports of November 1963 (CX 26),

December 1963 (CX 27 A–B), and January 1964 (CX 28 A–B), in his letter of January 3, 1964, to C. D. Michaelson (CX 29 A–B), and in his monthly report of February 1964 (CX 30), Mr. Kinnear repeatedly referred to his letter of October 22, 1963, continued to suggest a conference, and also sought permission to go forward on a local Utah coal investigation.

As a result, C. D. Michaelson "gave up" on Mr. Kinnear for purposes of a major coal study (C. D. Michaelson 5468), and Mr. Kinnear neither received any further instructions nor took any further action concerning such a study (Kinnear 1911–12; CX 26; CX 27 A–B). Thereafter, C. D. Michaelson simply requested S. D. Michaelson, chief engineer for WMD, in February 1964 to compile a list of coal experts who could act as consultants to evaluate and report on the desirability of a large-scale Kennecott coal operation (CX 31; C. D. Michaelson 5469–77; S. D. Michaelson 5345–47). Such a list was not forwarded to C. D. Michaelson until some 18 months later, on September 29, 1965, at a time when C. D. Michaelson was again—or still—pursuing information about coal as a possible avenue of diversification. The list, forwarded by Mr. Kinnear, was identified by him as "a candidate list of possible qualified people to take over an extensive and integrated coal operation" for Kennecott. (CX 86 A–E, CX 87–B; Kinnear 2069–70, 2138–40; S. D. Michaelson 5326–28; C. D. Michaelson 5469–70, 5476–77). The record is silent on what use was made of this list, if any, except that it was not used by Booz, Allen & Hamilton, Inc., in their search at about this same time for a coal executive for Kennecott (*infra*, p. 862; see Harman 5734–35). C. D. Michaelson retained Booz, Allen in September 1965 to find an experienced coal man for Kennecott. This was pursuant to Mr. Milliken's comment on July 29, 1965, when he alluded to the previous retention of Paul Shields as a consultant on coal in Utah and suggested that they should "get in touch with a consultant who would advise [Kennecott] on coal in the rest of the United States and elsewhere" (CX 81–A; see *infra*, p. 860).

Thus the broad coal diversification study that Kennecott's management wanted had not been prepared by WMD or by anybody else during the period 1963-1965.

In the interim, Mr. Kinnear had pressed for approval of his alternate proposal for an investigation to determine the feasibility of a Utah coal operation based on WMD's own fuel needs (CXs 25–31; Kinnear 1907–12). Ultimately, in April 1964, with the approval of C. D. Michaelson, the captive coal project was "re-activated," and pending negotiations for a new gas supply contract were deferred (CX 32 A–B; Kinnear 1915–18).

This was the setting in which Paul Shields, representing Kennecott, began to look for coal lands in proximity to Kennecott's Utah power plant. The search quickly focused on the mine being operated in Carbon County by the Knight-Ideal Coal Company. (CXs 32–36; see CX 18 A–I; Kinnear 1924–25; Shields 1365–68.)

The Knight-Ideal properties consisted of leaseholds and fee lands located near the towns of Wellington and Price in Carbon County, Utah, about 150 miles south of Salt Lake City. The main property consists of some 2,700 acres of coal under federal lease located in the vicinity of Dugout Canyon. Three seams of coal are located on the property: the Gilson, averaging over 11 feet, 6 inches in thickness; Rock Canyon, averaging over 6 feet, 6 inches in thickness; and Lower Sunnyside, averaging over 4 feet in thickness. (CX 61–D, CX 61–H, compare CX 59–B, CX 59–K, RX 14 E–G.)

After preliminary investigation, Kennecott obtained a 6-month purchase option on the Knight-Ideal property in October 1964 (CX 44 A–Z–3). The option was to expire May 1, 1965, but was extended to June 21, 1965 (CX 56 A–B). The purchase agreement (CX 68 A–I) was executed on that date, and title was transferred to Kennecott on July 21, 1965 (CX 79, CX 82).

Before tracing the intervening steps and related activities, the question of the relationship of the Knight-Ideal transaction to Kennecott's fuel needs will be considered.

b. *Relationship to UCD Fuel Needs*

At this point it is desirable to determine the validity of complaint counsel's contention that WMD's coal study became an investigation of coal as a business unrelated to the search for an alternate fuel supply for the Utah Copper Division. This position is explicitly stated in their brief:

> (e) Kennecott's investigation of coal *as a business* dates from April, 1963.
> (f) Kennecott's investigation of sources of coal solely as a fuel supply for Utah Copper Division ended in October, 1963.
> (g) The two investigations were unrelated. (CPF–Br. p. 70.)

Before examining the facts respecting these contentions, some background information on Kennecott's fuel needs and problems will be set forth.

Two of Kennecott's four Western Mining Divisions (WMD) are located in the States of Utah and Nevada. The Utah Copper Division (UCD) is located at Salt Lake City, Utah, and the Nevada Mines Division (NMD) at McGill, Nevada. (CX 4, p. 32; C. D. Michaelson 5426). The Utah Copper Division consists of five prin-

cipal facilities: the Bingham Canyon open-pit copper mine, the concentrators, the smelter, the refinery, and the power plant. The Bingham Canyon mine is located about 30 miles southwest of Salt Lake City; the other facilities are located about 15 miles north of the mine near the town of Magna. (RX 13 B–C; Thuli 3221.)

The UCD power plant has four units with a capability of producing 195 megawatts, and generates almost all the electrical power used by UCD (RX 13–M; Thuli 3221; Young 2858–59).

There are four steam boilers at the UCD power plant; the three older boilers supply the older power units, and the newer, more efficient boiler supplies the 75-megawatt unit (Young 2861). These boilers may be fired with either coal or gas, but for the last 15 years the UCD power plant has used natural gas as its primary fuel (almost 95 percent), with coal as a standby if the gas service is interrupted (RX 13–M; Thuli 3225; Young 2861–62). About 20,000 tons of coal are stored near the power plant to cover periods when gas is not available (RX 13–M). The smelter boilers also use natural gas, with oil as a standby when gas service is curtailed (Young 2865).

For at least the last 15 years, Mountain Fuel Supply Company, Salt Lake City, Utah, has been and still is the only supplier of natural gas to UCD (Thuli 3225). The annual cost of natural gas purchased from Mountain Fuel approximates $4.6 million, and it is a major cost factor in the operation of UCD (Thuli 3225–26; Kinnear 1823; Work 3015).

The Nevada Mines Division consists of an open-pit copper mine and related facilities, with annual production of copper approximating 15 percent of the Utah Copper Division's production (CX 8, p. 5). The electrical power for these facilities is generated by a small power plant that burns coal, and NMD purchases about 135,000 tons of coal annually from four or five Utah producers (S. D. Michaelson 5076; see RX 9–A). WMD has recently decided that it is advantageous to convert the NMD boilers to gas firing, and has started the preliminary design work necessary to convert the boilers to gas firing (Young 2920–22).

At an early date, C. D. Michaelson, who was general manager of WMD from 1955 to 1961 before going to New York as vice president in charge of mining, was concerned about the rising gas costs at UCD's power plant (C. D. Michaelson 5421, 5503–04), and this problem was the subject of almost constant study (CPF 130; RPF 262–282). Kennecott's president also was aware of these rising costs (Milliken 6315–16).

To counteract rising gas costs, Kennecott began to look for an alternate source of gas. Consideration was given to the acquisition of gas reserves, as well as to offers from other gas suppliers, but for various reasons such proposed solutions failed to reach fruition. (CPF 131; RPF 263–267.) In 1960, while UCD was negotiating for other reserves, Mountain Fuel, which thought that a pipeline from these reserves to the Magna refinery would have a substantial adverse effect on Mountain Fuel's operation, acquired them (CPF 132; RPF 268).

Kennecott is Mountain Fuel's largest customer in Utah. Over the past 10 years about 20 percent of Mountain Fuel's annual sales of gas (by volume) have been to Kennecott, and it depends on Kennecott's purchases, particularly in the summertime, to assure continuity of demand for gas. (Thuli 3244; Work 3011.) Mountain Fuel was concerned about losing Kennecott as a customer when it learned that Kennecott was considering other sources of gas or conversion of its UCD power plant from gas to coal (Thuli 3266; Work 3010–11). Mountain Fuel knew that gas price increases created a risk of losing its large industrial customers, including Kennecott (Work 3019–21).

After a gas price increase in 1960 (Work 3026–28), UCD carried on extensive negotiations during 1961 and 1962 with Sinclair Oil & Gas Pipe Line Corporation with respect to a proposal to provide gas to UCD (Thuli 3246–47). However, in May 1962, Mountain Fuel, aware that Kennecott had been negotiating with Sinclair, purchased from Sinclair the reserves that were the source for the proposed gas supply contract. (CPF 134–35; RPF 272–273.)

In August 1962, Mountain Fuel submitted a lower interruptible gas rate (the I–6 rate) to UCD, and at about the same time WMD began to study the "use of coal as an alternate to gas" and held several meetings with U. S. Fuel Co. "to obtain data to determine the economic feasibility of a possible changeover to coal fuel." (RX 35 A–B, RX 37 A–F.)

Complaint counsel's attempt to separate the coal operation feasibility study from WMD's interest in finding an alternate fuel to gas is essentially based on the format of WMD's monthly reports to management. Complaint counsel state (CPF 137) that from September 1962 forward there was a paragraph in WMD's monthly reports entitled "Utah gas (or alternate fuel supply, 9–62)" that considered the subject of gas or alternate fuel for UCD operations "separately" from the proposed coal operation feasibility study, and that the subjects of gas and coal were reported separately in some of the

1965 monthly reports, "ordinarily without even minimal reference to each other."

The record is essentially to the contrary. Despite the physical separation and the reading differentiation of the monthly reports on "Utah Gas" and the "Coal Operation Feasibility Study," the text of the exhibits cited in CPF 137(a), as well as others, repeatedly ties the two subjects together (CX 32: RX 54, RXs 56–64, RXs 66–69, RX 76), and coal is several times explicitly termed the "alternate fuel supply" under the "Utah Gas" heading (RXs 66–69–B). The fact that some of the reports do not cross-reference the two subjects (CPF 137(c)) does not support complaint counsel's conclusion that they were unrelated.

Not only the monthly reports, but other contemporaneous documents as well, demonstrate conclusively that gas and coal were intertwined in WMD's considerations of the local fuel problems of UCD. Moreover, although UCD had initiated a coal conversion study of its own—premised on the purchase of coal—before WMD's inquiry began and had recommended in October 1963 that the use of gas be continued (CPF 136; CRB, pp. 41–44) this does not destroy the link between gas and coal in WMD's consideration of a coal operation.

In his reports to C. D. Michaelson, Mr. Kinnear repeatedly emphasized the relationship between the gas and coal studies of WMD as the reason why WMD recommended no action on the I–6 gas contract pending the outcome of the coal operation feasibility study (RX 54, RX 56, RXs 57–64; CX 18–A, CX 20 A–G).

From April 1964 through most of 1965, WMD also gave consideration to a proposal from Brown-Hale & Associates to supply noninterruptible gas to UCD, and evinced interest in comparing this offer with coal costs (RX 66 A–B, RX 76). The Brown-Hale offer was subsequently found to be less advantageous than captive coal (CX 83 A–B).

After the purchase of the Knight-Ideal properties, WMD continued to evaluate comparative fuel costs and ultimately concluded that negotiations for a revised gas rate should be reopened (CX 88; RX 10; Lee 1660–61, 1676–78; RX 92; Work 3037–39).[28]

The contemporaneous documents thus show that in the period from April 1963 to the end of 1965, WMD considered gas and captive coal as alternates for its internal fuel needs and closely evaluated their comparative costs, and that gas from Mountain Fuel was ultimately recognized as the most economical alternative,

[28] This subject is further considered *infra*, pp. 850–52.

with the result that questions arose as to the development of a new mine by Kennecott at Knight-Ideal predicated as it was on a base load of captive coal (CX 88).

Complaint counsel further attempt to separate the coal investigation by WMD and Kennecott's decision to purchase the Knight-Ideal reserves from their link with the use and comparative costs of gas as a fuel at UCD by asserting that the gas rate offered by Mountain Fuel in November 1962 as part of a proposed 10-year I–6 contract was available to Kennecott at any time during the October 1962–November 1965 period, and that the rate which actually became effective under a revised I–4 schedule in August 1968 was higher than the rate which had been available under the proposed I–6 contract (CPF 140–141; CPF–Br. pp. 70–71). Complaint counsel's analysis is rejected because it is incomplete, does not distinguish between WMD in Salt Lake City and management in New York, and disregards the fact that management in New York refused to accept the recommendation of WMD in Salt Lake City that the I–6 contract offered by Mountain Fuel be approved.

The only element of the proposed I–6 gas contract considered by complaint counsel in their analysis is the unit cost of gas. That was not however, the only element of the proposed contract with which Kennecott's management was concerned, because the 10-year contract was to include a so-called take-or-pay provision which required Kennecott to pay for a minimum amount of gas at a minimum price even if it was not consumed.

Despite these factors, WMD had recommended to C.D. Michaelson as early as November 2, 1962, that Kennecott accept the proposed I–6 contract offered by Mountain Fuel for its Utah power plant because of the cost savings over the existing gas rates and over the alternate fuels—coal and oil (RX 44 A–B). But C. D. Michaelson rejected WMD's recommendation in a letter of November 15, 1962, calling particular attention to the minimum use and minimum charge provisions and suggesting further negotiations (RX 43; see RX 26; Kinnear 1829–31; C. D. Michaelson 5505–06).

Although WMD and UCD continued to recommend acceptance of the proposed I–6 contract, C. D. Michaelson refused to approve their recommendation (RX 43, RXs 45–53). By February 1963 it appears that C. D. Michaelson was concerned about the 10-year term of the contract during which an alternate fuel might prove more economical (see RXs 49–51, RX 53), and in the negotiations with Mountain Fuel, the Kennecott representatives particularly ob-

jected to the 10-year term, as well as the take-or-pay and escalation provisions (Work 3030–32).

When negotiations were resumed between Mountain Fuel and Kennecott in late November 1965—after it had become clear that neither the Brown-Hale gas proposals (CX 83–B) nor the purchase or the production of coal would be cheaper than gas purchased from Mountain Fuel (CX 88)—the discussion covered not only a proposed scaling-down of the unit rate but also the take-or-pay provisions, the term factor, and the extension of the I–6 rate to the smelter (RX 92 A–B, RX 94 A–B; Work 3036–48). Under the I–4 rate schedule that was eventually adopted, the contract term was completely eliminated, the minimum provision was reduced to an inconsequential amount, and the rate (which applied to the smelter as well as to the power plant), worked out overall, in terms of cost alone, to the same approximate saving of about $135,000 annually as the I–6, limited to the power plant, would have provided (Thuli 3274–75; Kinnear 1995, 2056; Work 3051).

Thus, a careful analysis of the terms of the Mountain Fuel proposal in 1962 and of the constant comparisons that were made between coal and gas until it was decided by Kennecott at the end of 1965 that gas was more economical at its Utah plant than coal from Knight Ideal could be, demonstrates, together with other evidence concerning the project, that Knight-Ideal was essentially predicated in Kennecott's captive-fuel needs.

c. *Relationship to Commercial Sales of Coal*

Although the foregoing evidence demonstrates (1) that the Knight-Ideal project developed in negation of the broad coal diversification study originally proposed and (2) that it was closely associated with Kennecott's own fuel needs, the record also makes clear that WMD viewed the project as preliminary to the production and sale of coal on a commercial basis and that while it was being developed, it was consistently so presented without any suggestion of a contrary view on the part of management in New York.

From the start, WMD's coal investigation involved two objectives: (1) a captive coal operation to fuel Kennecott's Utah and Nevada power plants and (2) commercial sales of surplus production to reduce unit costs of the captive operation (Kinnear 1903, 2022; Robinson 4409–11; CX 16 A–B, CX 38–B; see subsection "b," *supra*, p. 821). In addition, J. C. Kinnear, Jr., WMD's gen-

eral manager, and his staff saw the project as a possible "springboard" into a wider area of commercial coal operations—thus satisfying the evident interest of top management in the possibility of a large-scale diversification into coal. In Mr. Kinnear's view, a Utah coal operation would give Kennecott experience in the production and sale of coal and provide a base for orderly expansion. As he saw the picture, this could be the first step—a sort of pilot operation—in the broad-scope coal program apparently being contemplated by C. D. Michaelson.

For example, the "Preliminary Economic Evaluation" recommending the purchase of Knight-Ideal (CX 61 A–Z–18) stated:

> This is the first phase of an overall feasibility study of the benefits to be derived to Kennecott through entering the coal business, not only to supply the Corporation's western operation's capitive requirements for coal, but also to aggressively seek particularly to supply the requirements of western power companies and other major consumers. (CX 61–H.)

Moreover, in his letter of June 10, 1965, transmitting CX 61 A–Z–18 and recommending that the Knight-Ideal option be exercised (CX 63 A–L), Mr. Kinnear described the project as "pursuant to" C. D. Michaelson's requests in April and July 1963 (CX 14, CX 19) for an analysis of "the desirability of a Kennecott-owned coal operation of national or possible international scope but with initial consideration being given to a western operation" (CX 63 A–B). He emphasized the importance of recommendations "to exercise a property option which will allow Kennecott to become a Utah coal producer" (CX 63–A) so as to satisfy WMD's fuel requirements "and to provide a base for developing coal sales to other customers" (CX 63–B). (See, in addition, CXs 20–27, CX 29 A–B, CXs 37–39–C, CX 45 A–B, CX 47 A–C, Cx 51 A–G, CX 57, CX 61 D–I, CX 63 A–L, Cx 64 A–D; see also subsection "a," *supra*, p. 817)

This concept of Knight Ideal as "an initial Kennecott coal operation in the west," subject to later expansion (CX 39–A), runs throughout Mr. Kinnear's monthly and special reports to C. D. Michaelson, and the record contains no evidence of any negative reaction.[29] Moreover, WMD actively explored possible markets for Knight-Ideal coal and engaged in other activities predicated on a commercial coal operation.

Although WMD made no actual coal marketing studies, of utili-

[29] The ultimate reaction of top management and the board of directors is considered in subsection "e" *infra*, p. 838.

ties or otherwise (Kinnear 1906, 1976; S. D. Michaelson 5020, 5093–96), it did explore various sales possibilities for Knight-Ideal coal and, in its reports to C. D. Michaelson (CX 61 P–Q, CX 63 E–H), it was "bullish" over the prospects for outside sales (S. D. Michaelson 5375).

In estimating the commercial sales that might boost Knight-Ideal coal production, WMD considered the possibility of supplying between 150,000 and 650,000 tons annually to Utah Power & Light Company plus miscellaneous annual sales of 100,000 to 115,000 tons (CX 61–P; CX 63 G–H).

Mr. Kinnear and S. D. Michaelson held a single brief meeting on March 9, 1965, with the president and vice president of Utah Power & Light Company to explore whether there was any possibility of supplying coal to the utility's Castle Gate [30] and Gadsby power stations. S. D. Michaelson told the utility executives that WMD was investigating the acquisition of coal properties in Utah to get lower fuel costs for its own operations, and that any additional coal sales that could be made would be advantageous in reducing overall fuel costs. No prices were quoted, and the discussion was inconclusive. (CX 51–D; Kinnear 1900, 1939–46, 2095–97; Naughton 3202–04, 3210–11; S. D. Michaelson 5048, 5080–85, 5370–75, 5392–93; Blanchard 3184–85, 3197.)

Although, in hindsight, Kennecott was able to demonstrate that the prospects for sales to Utah Power & Light were remote (RPF 326–327), the fact remains that the Knight Ideal project was presented to management on the basis that this utility constituted an available market for Knight Ideal coal.

S. D. Michaelson had inquiries from friends or acquaintances at Anaconda Copper Company in Montana and the Bunker Hill Company in Idaho regarding the possibility of coal sales from the Knight-Ideal mine. These possibilities were duly noted in correspondence and reports, along with the possibility of sales to utilities, to school districts, and to Government agencies, based on the customer list of Knight-Ideal Coal Company (S. D. Michaelson 5385–86; CX 61 P–Q, CX 63–F).

There were other activities indicative of WMD's interest in the commercial aspects of the proposed Knight Ideal operation. In late 1964, S. D. Michaelson, WMD's chief engineer, expressed interest in a proposal made by Shirl C. McArthur, manager of the Deseret

[30] One of the Utah Power & Light officials did not recall that the Castle Gate plant was discussed (Naughton 3203).

coal mine operated by the Church of Jesus Christ of Later-Day Saints, at Huntington, Utah, for a joint arrangement between the Church, Peabody Coal Company, and Kennecott whereby Peabody and Kennecott might purchase and mine coal reserves in the Huntington area and jointly finance a 20-mile rail spur for the use of all three parties.

S. D. Michaelson advised Mr. McArthur "that Kennecott *might* be interested in some type of joint venture with the Church for the rail spur if the accessible economic coal reserves in the area could become controlled by the Church and Kennecott, thereby assuring to Kennecott the total commercial market for coal to this area." [31] This was reported by Mr. Kinnear to C. D. Michaelson in a letter dated December 31, 1964 (CX 47 A–C). This same letter also mentioned the possibility of Kennecott's fulfilling as a subcontractor Peabody's commitments to supply coal to the Nevada Power Company at Moapa, Nevada. Peabody had no coal production of its own in the area and was "planning to meet its initial delivery commitments temporarily by brokering spot-purchased coal" (CX 47–B).

Following Mr. McArthur's meeting with S. D. Michaelson, a further meeting was arranged in January 1965 with Hugh B. Lee, regional vice president of Peabody, regarding the proposed joint venture. Mr. Lee reported in a Peabody intercompany memorandum that S. D. Michaelson was "convinced a captive coal mine operation that could lead to outside commercial sales would be a desirable diversification along with an assurance of long term favorable fuel costs." (RX 9–A; see CX 53 A–B.)

There were overtures from Island Creek Coal Company regarding "some kind of joint venture with Kennecott," but Mr. Kinnear speculated that if Kennecott exercised the Knight Ideal option and built a Kennecott-controlled rail spur to serve Knight Ideal, this would place Island Creek in such a "discouraging competitive position" that Kennecott might obtain coal reserves adjacent to Knight Ideal that were then under option to Island Creek (CX 51 C–D).

Finally, in its recommendations for the purchase of Knight Ideal, WMD clearly contemplated commercial sales. It proposed the creation of a coal mining subsidiary, with the necessary managerial personnel, including a sales representative, "to take over the operation, build outside sales volume, and construct and operate an effi-

[31] All Church-produced coal is for Church use, and none is sold (McArthur 2696).

cient new coal mine on the property." The WMD plan called for retention of the existing Knight-Ideal work force "to temporarily continue . . . the present operation to supply committed outside sales and develop additional outside sales contracts." (CX 63–L, CX 64–B.) Mr. Kinnear expressed the belief that

> Kennecott can organize to produce commercial coal as efficiently and cheaply as the present national major producers, and with the Knight-Ideal property as a base, can become a significant competitor for coal business in the inter-mountain and northwest United States (CX 63–K).

He also identified Peabody and Island Creek as "the only serious potential competition presently envisioned" and described them as highly competent . . . coal miners and marketers." Although they could be expected to offer "strong competition to Kennecott for commercial sales," Mr. Kinnear believed that "Kennecott should be fully able to compete. . . . (CX 63–F.)

d. *WMD's Evaluation and Recommendations*

After Kenneiott obtained the option on the Knight-Ideal property in October 1964, steps were taken to evaluate the property. The mining engineering firm of Robinson & Robinson, Inc., was retained, and Paul Shields was reemployed as a consultant. Their function was to determine if the Knight-Ideal reserves were adequate to benefit Kennecott "by reducing the cost for fuel at the Utah Copper and Nevada Mines Divisions, and possibly from commercial sales of coal to others." (CX 37 A–C, CX 38 A–B, CX 39 A–C; Shields 1346; Kinnear 1928.) Meanwhile, WMD's engineering department was to "design and estimate the cost of modifications to the Utah Copper Division smelter and power plant to convert these from gas to coal firing so the total capital costs and operating cost savings in the company can be estimated" (CX 38–B).

The basic documents submitted to management in support of the recommendations to exercise the option and purchase the Knight-Ideal property were the Robinson & Robinson report (CX 59 A–Z–40) and WMD's "Preliminary Economic Evaluation" (CX 61 A–Z–18). CX 61 was drafted by Budd H. Ensign, a WMD engineer, and revised by S. D. Michaelson, WMD's chief engineer (Ensign 4863; S. D. Michaelson 5030).

Both of these reports contemplated that Kennecott would open a new mine in Pace Canyon to produce coal for its Utah and Nevada power plants and would actively seek outside sales to supplement this captive base. Initially, it was planned to continue opera-

tions at the operating mine in Dugout Canyon while construction of a new mine was under way. (CX 61–G, CX 63–L, CX 64–B; RX 14–F.) Neil Robinson of Robinson & Robinson understood that Kennecott was interested in Knight-Ideal as a possible source of lower cost fuel at its Utah and Nevada copper facilities, with such outside sales as would make it economical to mine coal for its captive needs (Robinson 4409–11).

Robinson & Robinson described its report dated April 16, 1965 as "a report on a proposed new coal mine to be located in Pace Canyon, Carbon County, Utah." (CX 59 A–B). The report was essentially favorable regarding the economics of a Knight-Ideal mining operation. Although it appears that further work would have been needed before opening a new mine, and that development of a mining plan was basic to an evaluation of the coal reserve, there is no doubt that the report was pointed toward the opening and operation of a new mine on the Knight-Ideal tract. (Robinson 4418–20; S. D. Michaelson 5038.)

The report was rushed and the test drilling had not been completed (Robinson 4413; Ensign 4853–54; CX 59–B, CX 59–R, CX 61–D), but WMD concluded that available information "did prove up adequate reserves and favorable roof and seam conditions for a low cost underground coal mining operation" (CX 63–D).

The Robinson & Robinson report described the Knight-Ideal properties, facilities, and equipment, indicated the nature of the drilling program, and estimated various capital and operating costs to operate a mine at various production levels (CX 59 A–Z–40). Because the proposed drilling program had not been completed, as a result of severe winter weather, the estimates of coal reserves contained in the report were "subject to change" as information was obtained from subsequent drillings (CX 59–K; Robinson 4412–13; Ensign 4852–53; CX 47–A, CX 49–B, CX 51–A).

Proved reserves in the Knight-Ideal tract were ultimately estimated as follows:

	Millions of tons	
	At 40 percent recovery [32]	At 50 percent recovery [32]
Gilson	13.4	16.7
Rock Canyon	11.7	14.6
Lower Sunnyside	2.3	2.8
Total	27.4	34.1

[32] The 40 percent recovery rate yielded a "conservative reserve estimate, considering the depths of the seams," but a 50 percent recovery rate had just been required by the U.S. Geological Survey (CX 61–J, CX 204–B).

(CX 61 J–K; see CX 59–B, L, CX 204 A–B; Ensign 4857–58; Robinson 4425–27.)

Of the three seams of coal on the main property, only the Rock Canyon and the Gilson had been mined (CX 59–Q), and the Lower Sunnyside seam was excluded from consideration in WMD's calculations of production and projected mine life (CX 61–L). Insofar as costs of production and types of equipment were concerned, the Robinson & Robinson report was based solely on estimated recoverable reserves in the Gilson seam (CX 59–Y).

Both reports also estimated probable reserves in lands adjacent to Knight-Ideal and suggested that they be leased (CX 59 K–L, CX 61 G–K).

Production costs per ton estimated in the Robinson & Robinson report were based on coal production esitmates of from 634,000 to 1,229,000 tons. At an estimated production of 634,000 tons, these costs ranged from $2.81 to $3.12 per ton, and at an estimated 1,229,000 tons, the costs dropped to $2.40 per ton. (CX 59–Z–5, Z–16). The low figure of 634,000 tons was the amount of coal then considered to be needed for the captive requirements for Kennecott's Nevada and Utah copper mining operations, while the higher production figures were assumed for the purpose of determining the most economic level of mining (Robinson 4409–10).

Meanwhile, however, in the course of the coal conversion study being conducted by UCD, it was learned that it was impractical to burn Knight-Ideal coal in the plant's three older boilers. This coal produced a high-fusion ash that would drop down into the bottom of the boilers in a sticky or solid state and would be very difficult to remove (Young 2906–09; Thuli 3262–64).

Mr. Ensign had already begun to draft WMD's Preliminary Economic Evaluation of the Knight Ideal properties when he learned that the three older boilers at the UCD power plant and the smelter boilers could not be economically converted to coal and that, as a result, WMD's captive coal needs would be only 400,000 tons annually (Ensign 4884; CX 61–P). Previously, reports on coal had been based on the assumption that the smelter and all the boilers at the power plant could be economically converted to coal (CX 18–C; Kinnear 1959–60). This information, however, did not change WMD's basic concept that coal properties could be a hedge against rising gas costs (Ensign 4884–85; S. D. Michaelson 5044–46).

The primary purpose of the Preliminary Economic Evaluation was to provide a basis upon which Kennecott's management and board of directors could determine whether or not to exercise the

Knight-Ideal option (CX 63–A; Kinnear 1968–69). The report was not intended to provide the basis for determination of whether a coal mine should actually be opened on the property; a much more detailed study, including substantial additional drilling, would have been required for this purpose (Ensign 4861–62, 4873; S. D. Michaelson 5069–70; Kinnear 1053; Robinson 4418–20).

The Preliminary Economic Evaluation of WMD (CX 61 A–Z–18) projected the "mine life" of Knight Ideal at 40 percent and 50 percent recovery rates and also at various levels of annual production.

On the basis of annual production of 400,000 tons—representing captive needs—the mine life was estimated as 73 years at 40 percent recovery or 91 years at 50 percent. Calculations were also made for higher levels of production up to 1,165,000 tons to provide for outside sales. At this level of production, the mine life was estimated as 25 years at 40 percent recovery and 31 years at 50 percent recovery (CX 61–F).

The estimated initial capital costs ranged from $4.2 million for annual production of 400,000 tons to about $6 million for annual production of 1,165,000 tons (CX 61–F, V).

The Preliminary Economic Evaluation was commenced in February 1965, initially completed on May 28, 1965, and revised on June 10, 1965 (CX 61 A–Z–18; Ensign 4854, 4863). It relied on the data contained in the Robinson & Robinson report and on the WMD studies on converting the UCD facilities from gas to coal (Ensign 4855–57). The report recommended that Kennecott exercise its option to purchase the Knight-Ideal properties for the following reasons:

> 1. To obtain a long-term fuel reserve at an estimated cost of 2.57 to 3.21 cents per ton of proven recoverable coal (without considering coal in the Lower Sunnyside seam) for protection against future excessive price increases in purchased natural gas and the decreasing natural gas reserves controlled by the Mountain Fuel Supply Company and being depleted to supply the growing domestic and smaller industrial users of firm (uninterrupt[i]ble) gas.
>
> 2. To obtain a reserve to use as a base in developing potential outside coal markets, with the expectation of obtaining enough commitments to permit a profitable coal operation.
>
> 3. To supply coal to the Utah Copper Division['s] new boilers, and to the Nevada Mines Division, even without outside sales in large volume, if further engineering and economic studies are found to confirm the preliminary findings in this report. (CX 61–G.)

In his letter dated June 10, 1965, to C. D. Michaelson transmitting the report, Mr. Kinnear stated as the first and, in his opinion, the most important reason for exercising the option:

The acquisition of this ample high-grade coal reserve will provide Kennecott with a most desirable defensive reserve against higher future prices for other fuels, particularly higher priced natural gas for the Utah Copper Division. (CX 63 J–K; see Kinnear 1953–55, 1970–71; C. D. Michaelson 5527–30; S. D. Michaelson 5060–61.)

Although two other reasons relied on by Mr. Kinnear in urging the purchase relate to prospects for a commercial coal operation, Mr. Kinnear mentioned that the property could "carry itself" even if it were used solely for captive production of 400,000 tons a year. He emphasized, too, that if the property were simply held as a reserve, it "should appreciate in value with the passage of time" since it was "one of the most desirable low cost steam coal reserves in the inter-mountain area." He cited the possibility that both the Lower Sunnyside seam and the Gilson seam might contain coking coal as another factor that might significantly increase its value. (CX 63–K.)

The Preliminary Economic Evaluation outlined a 5-point program that "should be undertaken" after the option was exercised:

1. Continue operating the present mine until the existing coal contracts inherited under the option are completed.
2. Apply for leases on the unleased U. S. lands bordering the property on the north and south.
3. Recruit and engage a man to actively develop the outside sales necessary to sustain a profitable annual rate of production from the mine.
4. Initiate detailed engineering studies to develop the final mining plan and to design the underground mine. the materials handling system and the surface plant facilities.
5. Institute a second drilling program to determine the total coal reserves on the northern unleased U. S. coal lands and the Gilson seam reserves on the northern half of the Knight-Ideal property. (CX 61–G.)

The basic recommendation of the Preliminary Economic Evaluation was that Kennecott should exercise the option to purchase the assets of the Knight-Ideal Coal Company, including the operating mine and the obligation to service the existing customers, but an alternate proposal for acquiring the reserves on a "stand-by" basis was also included (CX 61–Z–4; see CX 63–K, par. 4).

A few days before the option was to expire, and before the project was submitted to the Board of Directors, Mr. Milliken and C. D. Michaelson rejected the basic recommendation to buy the operating mine and its facilities and decided on the alternate recommendation to buy only the Knight-Ideal coal reserves (Kinnear 1978; C. D. Michaelson 5515–17). In C. D. Michaelson's view, acceptance of the basic recommendation would have meant operating the property in

the same way it was being operated. He felt that purchase of the reserves alone was preferable because this provided sufficient protection against increasing fuel costs (C. D. Michaelson 5515–17). Mr. Milliken concurred in this view (C. D. Michaelson 5517–20; Milliken 6335–38).

In line with this determination, Mr. Kinnear received a telephone call from C. D. Michaelson on June 16, 1965, in which he was told that he was authorized to negotiate for the Knight-Ideal reserves only and that the existing mine on the property should be shut down by the Knight-Ideal Coal Company (Kinnear 1978–82, 2075–78, 2125–28, 2147–49). This instruction was given by telephone because Kennecott had only 2 or 3 days within which to decide whether it would exercise the Knight-Ideal option (C. D. Michaelson 5519–20).

Under the original option agreement, Kennecott was to purchase the going mine and equipment and to honor Knight-Ideal's outstanding commitments to customers (CX 44 F–G; Kinnear 1955–56, 1980). The option agreement was hurriedly revised so that Kennecott would acquire only the coal reserves and Knight-Ideal would retain ownership of everything else and would be obligated to fulfill its own coal commitments, to remove its mining equipment from the property, and to be responsible for closing and sealing the mine (CX 68 A–I; Kinnear 1979–81, 2147–49; S. D. Michaelson 5413–17). As a result of these changes, the purchase price was reduced from $805,000 to $750,000 (Kinnear 1981).

On June 16, 1965, Kennecott notified Knight-Ideal by letter of its intent to exercise the option for the coal reserves, and on June 21, 1965, the last day of the option period, the parties entered into an agreement whereby Kennecott would acquire only the coal reserves plus the property and buildings owned by Knight-Ideal at Wellington, Utah (CX 65; CX 68 A–I; Kinnear 2128).

This decision was made pursuant to a resolution adopted by Kennecott's board of directors on June 18, 1965, approving the purchase of the Knight-Ideal reserves for the sum of $750,000 (including the $15,000 paid for the option). The board also authorized an expenditure of $6,244,000 for development of a mine. (CX 66 A–B; C. D. Michaelson 5521–23.) The next subsection will recount what was said and done by management and by the board of directors respecting the Knight-Ideal project.

On the basis of the contemporaneous documents alone, it is clear that the Knight-Ideal project was viewed by WMD (1) as a "defensive reserve" against rising gas costs and (2) as a first step into the commercial coal business.

The conflict between the contemporaneous documents and the testimony presented by respondent—a conflict much relied on by complaint counsel (CPF–Br, pp. 32–40)—arises in connection with this dual aspect of the proposal to acquire Knight-Ideal. In their testimony, WMD personnel minimized the commercial coal business aspect of Knight-Ideal and insisted that the "defensive reserve" aspect was the primary reason, if not the sole reason, for their recommendations that Knight-Ideal be purchased (Kinnear 1901–02, 1953–59, 1970–71, 2062, 2144–45; S. D. Michaelson 5019, 5027, 5036–37, 5044–48, 5060–61, 5335–41, 5410–12; Ensign 4843, 4864–65, 4917–18, 4922–23, 4994, 5001–02). There was considerable quibbling by these witnesses over the difference between a "recommendation" and a "proposal." Complaint counsel dismiss the distinctions drawn as "sheer semanticism" (CPF–Br., pp. 33, 35, 83).

S. D. Michaelson and Budd H. Ensign even went so far as to suggest that all the detail concerning mining plans and the possibility of outside sales was window dressing to support a foregone conclusion that the Knight-Ideal coal reserves were needed as a "hedge" against rising gas costs or as a bargaining weapon or 'wedge," in negotiations with Mountain Fuel Supply Company and to actually provide fuel if the use of Knight-Ideal as a threat failed to impress the gas company (S. D. Michaelson 5410–11; Ensign 5000–02).

Although understandable, complaint counsel's complete skepticism regarding the basic validity of this explanation is not well-founded (CPF–Br, pp. 33–36). Not only did WMD's recommendations to C. D. Michaelson emphasize the importance of Knight-Ideal as a "defensive reserve" or a "hedge" against rising gas costs (CX 61–G, CX 63–K), but other documents as well reflect this aspect of the transaction, including Kennecott's letter to the Knight-Ideal union (RX 85 A–B; see RX 84 A–C) and the press release announcing Kennecott's acquisition of the Knight-Ideal reserves (CX 69; see *infra*, p. 850).

In addition, this aspect of Knight-Ideal was recognized by persons not connected with Kennecott, for example:

(1) *Claude P. Heiner*, a coal operator with wide knowledge of local conditions in Carbon County, Utah, who played some part, on the other side of the table, in WMD's efforts to acquire coal properties in Carbon County and who independently reached a negative conclusion about the likelihood of Kennecott's conducting any coal operations at Knight-Ideal, testified (Tr. 2636–37) that in his opinion Kennecott purchased the Knight-Ideal reserves as "fuel insurance."

(2) *Hugh B. Lee*, a vice president of Peabody Coal Company, recognized Kennecott's desire for "an unopened reserve for a long-range defensive position on fuel" (CX 51–D and CX 53–B, quoted in CPF 167, 169).

(3) *Neldon L. Sitterud*, the vice president of the Knight-Ideal Independent Union, testified that a Kennecott representative told him in July 1965 that Kennecott "had bought the mine for reserve so that at the time that the gas went too high they would mine their own coal" (Tr. 2671–74).

Moreover, the usefulness of captive coal reserves to keep suppliers' prices in line was testified to by Philip Sporn (Tr. 4495, 5848-49; see also O'Brien 5303–04).

The projections regarding the rates of return anticipated at various levels of coal production also tend to support respondent's "defensive reserve" explanation of the Knight-Ideal purchase.

The Preliminary Economic Evaluation, as revised on June 10, 1965, estimated that the annual production would have to approximate 1 million tons to yield a return on investment of 12 percent; 800,000 tons for 10 percent; 700,000 tons for 8 percent; and 400,000 tons for 6 percent (CX 61–E; Ensign 4877–78). In a risk venture such as coal mining, Kennecott's corporate investment policy required a return on investment of 12 percent to 15 percent, and a major capital investment would generally not be recommended if the return on investment was as low as 6 percent to 8 percent (Kinnear 1952; S. D. Michaelson 5058). The only justification for a substantial capital investment involving such low rates of return was the fact that the investment was necessary to act as a hedge against increasing gas prices [33] (S. D. Michaelson 5059; Milliken 6350–51).

Thus, the record establishes that, contrary to CPF 145, both the possibility of a coal operation for captive needs only and the possibility of an operation for both captive needs and outside sales were presented to management in connection with the Knight-Ideal reserves (CX 61 D–F, P–Q, V–Y, Z–1–Z–14, CX 63 G–K). In fact, WMD considered both possibilities from the outset of its coal study (see, for example, RX 54; CX 18–A, H; CX 20 B–G).

It is fair to state further that in all the reports, the projected production of a new Knight-Ideal mine was predicated upon a mine that would first produce captive coal for UCD and NMD; all cal-

[33] Before the report of May 28, 1965, was revised on June 10, 1965, it estimated that a million-ton mine would yield a return on investment of only 8 percent and a 900,000 ton mine would yield a return of only 6 percent. Even these low rates of return on a high production level were thought by WMD to be acceptable in view of its fuel problems. (Ensign 4878–79; S. D. Michaelson 5058–59.)

culations with respect to outside sales were in addition to captive production. There is no showing whatever of any consideration of a mine that would produce coal for outside sales without first producing coal for Kennecott's own needs.

Nevertheless, the basic recommendation of WMD did urge the Knight-Ideal acquisition for the dual purpose of (1) providing an alternate fuel supply for UCD and NMD and (2) serving as a base for Kennecott's entry into the coal business.

e. *Intent of Kennecott's Management and Directors*

As president of Kennecott, Frank R. Milliken was the corporate officer with the responsibility to find a place to invest Kennecott's excess funds and to recommend to the board of directors that Kennecott go into a new business (Milliken 6306). He testified that he never considered WMD's "Preliminary Economic Evaluation" (CX 61 A–Z–18) or the Robinson & Robinson report (CX 59 A–Z–40) as feasibility studies for going into the coal business. The Robinson & Robinson report did not directly deal with this question, and, in Mr. Milliken's view, WMD was not equipped to render advice on entry into a new business such as coal. (Milliken 6335, 6339–40.)

According to Mr. Milliken, there "was no relationship whatsoever" between his consideration of coal as a possible area for diversification and the study of coal as the fuel for the UCD boilers; they were two separate and completely distinct problems (Tr. 6326; see C. D. Michaelson 5543; compare CX 67–B).

Although there had been some discussion of diversification into coal as a result of Mr. Guggenheim's letter of April 13, 1963 (RX 237 A–B; *supra*, p. 815), Mr. Milliken had no recollection of any discussion of an investigation into a western coal mining operation at that time. Mr. Milliken stated that he and C. D. Michaelson had discussed the need for them to "become educated" about the coal industry, but he neither directed, nor was he aware of, C. D. Michaelson's directions to Mr. Kinnear to embark on a study of the subject, nor did he know of the Knight-Ideal option agreement in 1964. He indicated that he did not become aware of these matters until shortly before the board meeting of June 18, 1965, except that he understood that field personnel were investigating coal as fuel for UCD "as a hedge against gas prices." (Tr. 6315–23, 6374–80.)

In denying that the acquisition of the Knight-Ideal coal reserves constituted a decision by Kennecott to diversify into coal, Mr.

Milliken testified that the procedure followed respecting Knight-Ideal was not in accordance with established procedure for presenting a proposal to the Board regarding entry into a new business (Tr. 6338–39, 6346–47, 6352, 6356, 6390–91, 6397). According to uncontradicted tectimony of the directors (including Mr. Milliken and C. D. Michaelson), this established procedure is substantially as follows:

A report is prepared that includes the following information: a thorough explanation of the reasons for entering the new business; an analysis of the potential market by an expert in the business, including a consideration of the future for the product and competition from other products; a statement of the total magnitude of the project, both in terms of the initial appropriation and of the contemplated future expansion; an estimate of the entire period of time during which funds would be expended; an explanation of how the money would be spent; a projection of the return on investment from the business; a description of how the new business is related to the activities of Kennecott; and an analysis of the entry into the new business in the light of the outlook for Kennecott and the diversification goals of the company. (Milliken 6346–52; C. D. Michaelson 5478–79; Phalen 4253; Stradella 5789–92; see CX 11, CX 154.)

This type of analysis was made in connection with the proposed acquisition of an oil company and in connection with the purchase of Peabody (CX 11; CX 154; Stradella 5789–91; Milliken 6346–49).

The report is discussed by the executive committee before submission to the board. It is then sent to the board members before the meeting, because there is not sufficient time at a board meeting to read such a report (Milliken 6346, 6428).

The board, after reviewing the material and being briefed by Kennecott's management, discusses the matter of the new business in depth, regardless of the size of the new business (Phalen 4252–53; C. D. Michaelson 5541–42; Milliken 6346–48). Thus, when the directors considered going into the business of making a product called Kocide, they first had a thorough discussion of the product, its uses as a plant fungicide and as an ingredient in marine anti-fouling paints, and then several years were spent in testing and determining the potential market for the product before the company spent $4 million to construct a plant (Phalen 4252–53; C. D. Michaelson 5541; CX 9, p. 18).

No such procedure was followed in connection with the authorization of the purchase of the Knight-Ideal reserves, which was viewed by management and the directors as a project for local operational

purposes at WMD and not for corporate diversification into a new business (Milliken 6326, 6338, 6352–56; C. D. Michaelson 5465, 5542; Stradella 5791–92; Phalen 4245–47).

Immediate action had to be taken on Knight-Ideal because the option was to expire on June 21, 1965, only 3 days after the board meeting on June 18, 1965, and the decision was rushed because of the deadline (Milliken 6427–28; C. D. Michaelson 5519; CX 56 A–B). No documents were distributed to the directors before the meeting, and at the meeting the Preliminary Economic Evaluation [34] was the only document on this matter in the directors' folders (Stradella 5784; Milliken 6344–46, 6428; Phalen 4241–42; CX 66–A). The proposal for the purchase of the Knight-Ideal reserves was made jointly at the meeting by Mr. Milliken and C. D. Michaelson (CX 66–A; Phalen 4242; Milliken 6343; C. D. Michaelson 5477). Mr. Milliken began by pointing out that WMD had long been faced with a fuel cost problem involving the natural gas used to generate electricity and that it was worried about substantial increases in the price of gas in the future (Milliken 6345; Phalen 4243; Stradella 5784–85). C. D. Michaelson then described the Knight-Ideal reserves and the possibility of utilizing them either as a bargaining weapon if Mountain Fuel attempted to increase gas rates or as a source of coal for the Utah and Nevada operations if Kennecott was unable to obtain more favorable treatment from Mountain Fuel's gas rates should become too high (Milliken 6321, 6345-46, 6424–27; C. D. Michaelson 5477–78; Phalen 4243, 4247, 4250–51; Stradella 5784–86).

According to the testimony of all concerned, neither Mr. Milliken nor C. D. Michaelson nor anyone else said or implied to the directors that the purchase of the Knight-Ideal reserves was a first step in putting Kennecott into the coal business. The testimony is that the directors were not asked to make any decision with respect to entering the coal business. (Milliken 6346; C. D. Michaelson 5478; Phalen 4244; Stradella 5786, 5791–92, 5815–17).

To the extent that any reference was made to outside sales of coal, C. D. Michaelson said the representation was that such sales would be designed to reduce the unit costs of operations (Tr. 5477–78). Mr. Milliken had no recollection of mentioning to the board the possibility of selling coal and thereby reducing production costs. Even though WMD presented the project on the basis of outside sales, management neither accepted it on that basis nor presented

[34] The revised transaction—involving only the purchase of coal reserves—was not reflected in the Preliminary Economic Evaluation, which was in terms of the original option to take over the operating mine and the mining equipment.

it to the board on that basis. From Mr. Milliken's silence on this point, the board might have inferred that the Knight Ideal project was for captive use only. (Tr. 6386–89.)

The entire presentation by Mr. Milliken and C. D. Michaelson took only about 10 or 15 minutes (Milliken 6344; C. D. Michaelson 5477; Phalen 4243–44, 4250). The time was insufficient to discuss the proposal in depth (Milliken 6354–55; 6422; Stradella 5815–18). In view of the short period of time devoted to Knight-Ideal at the meeting, it is unlikely that any of the Board members read the Preliminary Economic Evaluation (CX 61 A–Z–18), which consisted of 44 pages, including charts and diagrams (Milliken 6345, 6354; Stradella 5817–18).

The minutes of the board meeting (CX 66 A–B) are consistent with this testimony and contain no intimation of board approval of Kennecott's entry into the coal business. The minutes reflect that the president "informed the board of the proposed purchase of certain coal reserves and adjoining real estate from the Knight-Ideal Coal Company in Utah" and that C. D. Michaelson discussed "plans for development of the coal deposit." C. D. Michaelson stated that the purchase price would be $735,000, and he requested "an authorized initial expenditure of $6,244,000 for development purposes."

The action of the board was to approve "the proposed purchase of the coal deposits and other real estate . . . on the terms and conditions as described" and to authorize the corporate officers or Mr. Kinnear "to carry out such purchase, and in that connection, to sign any and all documents and take all further action, including the formation of a subsidiary corporation to hold and operate this property, as they deem it necessary or desirable." The proposed expenditure of $6,244,000 in connection with the coal deposits was also approved. (CX 66 A–B.)

The minutes do not reflect the reason for the purchase.

The phraseology used by one of the directors, Charles G. Stradella, the retired chairman of the board of General Motors Acceptance Corporation (Tr. 5783), in describing the board meeting provided the basis for a wide-ranging attack by complaint counsel on the credibility of not only Mr. Stradella's testimony, but the testimony of virtually all the other Kennecott personnel who appeared as witnesses (CPF–Br, pp. 33–36).

After testifying that, as he recalled the presentation to the board, the explanation related to an effort by WMD to prevent an increase in gas rates by indicating to the gas supplier that Kennecott might switch to captive coal (Tr. 5784–85), Mr. Stradella went on to

characterize the Knight-Ideal purchase as amounting to what he "would call a kind of a game they were playing with the utility to see, if possible, that the rates were not raised." (Tr. 5785–86.) He made other references in his testimony to a "game," discussed the "threat that was to be posed" to the utility (Tr. 5786), and used the word "ploy" to describe the role of Knight-Ideal in the bargaining (Tr. 5788).

With this testimony as a springboard, complaint counsel would discredit the testimony of virtualy all of the respondent's witnesses, including the president, one of the vice presidents, and two of the directors of Kennecott (one, as noted, the former board chairman of GMAC [Mr. Stradella], the other [Mr. Phalen] the chairman of the executive committee of Marine Midland Banks, Inc., and the former president and chairman of the board of New York Telephone Company); the general manager, the chief engineer and a project engineer of WMD; the chief engineer of UCD; and the vice president and general sales manager of Peabody (CPF–BR, p. 33).

On the basis of Mr. Stradella's "game" characterization—coupled with somewhat similar phraseology used by S. D. Michaelson (Tr. 5018–19, 5037, 5046–47, 5339–41)—complaint counsel accuse each of these witnesses of attempting "to impeach the non-ambiguous documentary declarations of documents" written several years previously by claiming "to have been a participant in a grand corporate scheme" or "game" which was "designed and played out . . . to fool Mountain Fuel Supply Company" (CPF–Br, pp. 33–34).

This reference to the "defensive reserve" explanation of the Knight-Ideal purchase is an unacceptable oversimplification of the evidence and an unwarranted reflection on the credibility of respondent's witnesses. True enough, the examiner, largely on the basis of the contemporaneous documents, has rejected or discounted the testimony of WMD personnel that magnified the "hedge" aspect of the Knight-Ideal acquisition—particularly its use as a bargaining weapon—to the exclusion of its commercial sales aspects (*supra*, pp. 826, 836, 837). But in their zeal to point to Knight-Ideal as the first step in Kennecott's diversification into coal on a de novo basis, complaint counsel ignore the very documents they profess to rely on. As the examiner has found (*supra*, pp. 826, 836–37), the documentation shows that the use of Knight-Ideal as a "defensive reserve"—embracing the concept of both a bargaining weapon and a long-range hedge—was foremost in WMD's consideration of the project, even though outside sales were contemplated as well. When all the testimony is read in context with the documents, it is clear

that respondent does not contend, and no witness stated, that Kennecott engaged in any scheme to "fool" its gas supplier. Both the testimony and the documents reflect an effort to acquire an alternate fuel supply (first gas, then coal) to strengthen Kennecott's position vis-a-vis Mountain Fuel with respect to gas prices in the immediate future and in the more distant future.

The view taken by management in its presentation to the board is by no means inherently incredible under all the circumstances. Neither management nor the Board was bound by WMD's recommendations or the underlying rationale; in fact, management had already vetoed a key element in the WMD proposal—the continued operation of the Knight-Ideal mine.

Accordingly, the examiner has rejected complaint counsel's wholesale indictment of the credibility of respondent's witnesses. Instead, he has based his findings on both the testimony and the contemporaneous documents after a judicious weighing of each in the light of the other.

After the board meeting, Mr. Milliken, on July 12, 1965, mailed to each member of the board a letter and a 10-page memorandum that provided information that had not been orally presented to the board and substantiated the position that the Knight-Ideal reserves would help UCD control fuel costs (Milliken 6353–57, 6386–87, 6422, 6425–28; C. D. Michaelson 5544–45, 5644; CX 67 A–K). Except for the first page of the summary material, which was written by C. D. Michaelson and Mr. Milliken, all of the information sent to the board was taken directly from the letter that Mr. Kinnear had sent to C. D. Michaelson on June 10, 1965 (C. D. Michaelson 5542; Milliken 6353; compare CX 67 A–K with CX 63 A–L).

With one exception, Mr. Milliken's memorandum to the board described the advantages of acquiring these reserves in exactly the same terms used by Mr. Kinnear (CX 67 J–K, CX 63 K–L; see *supra*, p. 834).

C. D. Michaelson intentionally omitted from the memorandum the paragraph numbered 5 on pages 11 and 12 of Mr. Kinnear's letter of June 10, 1965, because he disagreed with its conclusions (C. D. Michaelson 5529–30). The deleted paragraph was to the effect that Kennecott could "organize to produce commercial coal as efficiently and cheaply as the present national major producers," and with the Knight-Ideal property as a base, it could "become a significant competitor for coal business in the inter-mountain and northwest United States." (CX 63 K–L.)

Despite the elimination from CX 67 A–K of this optimistic assess-

ment of Kennecott as a competitor in the coal business, the memorandum nevertheless incorporated Mr. Kinnear's discussion of potential commercial coal sales and of the competitive state of the coal business in the intermountain and northwest marketing areas, including the prediction that "coal from the Knight-Ideal property, if efficiently mined, could present strong competition to other fuels" in these marketing areas (CX 63 E–G, CX 67 F–G).[35]

Neither the minutes nor the material sent to the board and referred to the Knight-Ideal purchase as a possible solution to Kennecott's diversification problems. These documents contained no mention of the oil study (CX 11) or of the continuing investigation of the oil industry, or of Kennecott's possible entry into the coal business if the attempt to purchase an oil company was not successful, or of the Knight-Ideal purchase as an investment of Kennecott's growing cash reserves. (CX 66 A–B; CX 67 A–K.)

However, the introductory comments authored by C. D. Michaelson and Mr. Milliken (CX 67–B) did contain several statements indicative of the possibility of a Kennecott commercial coal operation. Under the heading "Purchase of Coal Reserves," the first two paragraphs were as follows:

> Fuel for power generation and for ore processing represents one of the important supply costs at the operating divisions. As a consequence, studies have been conducted at various times to consider the feasibility of a company source of fuel, either natural gas, fossil fuels, or, in later years, atomic energy.
>
> The studies on the utilization of fossil fuels developed two interesting situations; the consideration of the acquisition of coal reserves and the mining of coal to satisfy the fuel requirements of Utah Copper and Nevada Mines Divisions and the possibility of Kennecott Copper Corporation entering into the coal mining business on a national, or even international, scale. (CX 67–B.)

Then, after a generally optimistic discussion of prospects for coal, particularly for electric utility use and for export, including a prediction of greatly increased coal consumption in the Mountain and Pacific States area, the introduction stated:

> The fact that a company market sufficiently large to justify an economic coal operation already exists, prompted us to make our initial investigation of the coal resources and potential in the Intermountain area of the western United States. (CX 67–B.)

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[35] In this section, C. D. Michaelson did eliminate Mr. Kinnear's observation that "the long standing cordial relationships with western utilities and other industrial users should also be helpful in soliciting outside sales." (CX 63–F; compare CX 67–F; C. D. Michaelson 5531.)

Next, under the heading "Selections of potential Western Coal Reserves," came the material lifted from Mr. Kinnear's letter discussing the "principal coal producing and reserve areas in the western United States which are presently within economic marketing distances of major consumers or 'pit-mouth' power plants" in Utah, Wyoming, New Mexico and Colorado. (CX 67–C, CX 63 B–C.) As to the Kaiparowits area in southern Utah, the statement said:

> Since this coal field cannot economically now serve the more profitable northern markets, or the Utah and Nevada Divisions, it has no near-term value to Kennecott for an early entry into the coal business. (CX 67–C, CX 63–C.)

Regarding Wyoming, and particularly the Kemmerer area, the summary noted that:

> Utility plans and coal land ownership controlling future expansion of this operation make it impractical for Kennecott to consider a coal venture in this area during the foreseeable future. (CX 67–C, CX 63–C.)

After characterizing the Colorado-New Mexico coal reserves as having "limited commercial marketability and interest to Kennecott at this time," the summary stated that because "none of these fields can be expected to supply any appreciable part of the Inter-mountain or West Coast markets," they "were not given detailed consideration in our present study." (CX 67–C; compare CX 63–C.)

The introductory material concluded with the statement that the central Utah coal fields were of the "most potential and immediate interest to Kennecott" and went on to discuss the various reserves in Carbon and Emery Counties that were investigated before the Knight-Ideal tract was optioned as "one of the best properties" in the area (CX 67 C–D, CX 63 C–D).

Mr. Milliken was hard put to explain these statements in the light of management's description of Knight-Ideal as a "hedge" and as a possible source for captive coal production. He said that this was illustrative of management's "educative efforts to be informed about coal" (Tr. 6406–07; compare Tr. 6405).

In any event, Mr. Milliken was positive in stating that Kennecott had neither formed any intention nor made any decision to go into the coal mining business until it began its consideration of purchasing Peabody. Kennecott had studied coal for a number of years, and the question was "an open docket" on the slate. (Tr. 6390–91.)

Insisting that the Knight-Ideal transaction did not relate to Kennecott's consideration of diversifying into the coal business, Mr. Milliken explained:

Our object of diversification into coal was to be in coal in such a way we would have very significant current earnings from it. It would be a vehicle . . . which . . . would enable us to invest the capital that we had in the future, available cash from annual operation, over a period of time. That was our reason for getting into the coal business to solve that problem, and this Knight-Ideal situation just had no impact whatsoever on that problem. We never considered it in relation to diversification in the coal business. (Tr. 6397–98; see Tr. 6312–15.)

Knight-Ideal was never discussed at any other board meeting (Milliken 6371; Stradella 5789), and the board never discussed the acquisition of any Utah coal reserves in addition to Knight-Ideal (Stradella 5786). Before the board was advised of the negotiations with Peabody, Kennecott's management had never presented to the board either the subject of Kennecott's entry into the coal business or a proposal for the acquisition of a coal company. (C. D. Michaelson 5476; Milliken 6366–67.)

The action of Kennecott's management and its board of directors in acquiring the Knight-Ideal coal reserves against the background set forth in CX 67 A–K manifests a developing interest in a commercial coal operation. Nevertheless, the record as a whole does not support a finding that by acquiring the Knight-Ideal reserves, Kennecott intended to take the first step in a de novo entry into the coal business.

From the viewpoint of management, the acquisition of these coal reserves made economic sense, regardless of the use to which they might ultimately be put. Kennecott's control of these coal lands gave it a "defensive reserve" that might tend to hold gas prices down or, failing that, it might provide an alternate source of fuel. It appeared to be a good investment.[36] Finally, if the proposed diversification into the oil industry failed to materialize, Kennecott would be better prepared to do something about coal, which was obviously the next product area to be considered.[37]

[36] Although respondent seems to minimize the possibility that the Knight-Ideal reserves might contain coking coal of metallurgical quality (RRB–Ex, p. 64a), it appears to the examiner that this is a factor tending to support the action of management and the board of directors in simply acquiring the Knight-Ideal reserves, possibly as an investment, since coking coal commands a materially higher price than steam coal (*supra*, p. 772) and its presence would thus enhance the value of Knight-Ideal. Neil Robinson found the coking coal potential "exciting" (CX 59–C), and this potential was cited, though not evaluated, in all of the key documents respecting Knight-Ideal (CX 59–C, O; CX 61–L; Z–4, CX 63–K, CX 67–J; and see Robinson 4410).

[37] In that connection, it has occurred to the examiner that in recognition of the possibility that it might eventually get into the coal business by the merger route—that is, by acquiring a coal company—Kennecott's careful legal advisors, or one or more practical corporate executives, might have cautioned against going into the coal business through the Knight-Ideal operation lest Kennecott thereby face a charge of engaging in an anticompetitive "horizontal" merger. But this is sheer speculation, totally unsupported by the record, and it can provide no proper basis for an initial decision that must be based on the evidentiary record.

There are three principal factors that tend to corroborate the testimony of Kennecott's executives and directors that the Knight-Ideal acquisition did not represent a purposeful diversification into coal. First, negotiations for an oil company were still active at this time (*supra*, p. 814), and the magnitude of the investment required for that purpose would have precluded a substantial diversification into coal on a de novo basis or otherwise (Milliken 6320–21, 6330, 6391; C. D. Michaelson 5463–64; Fisher 4669). Moreover, it hardly seems likely that Kennecott would embark on two such major shifts in its business at the same time.

Second, the relative insignificance of the Knight-Ideal investment did not represent the answer to Kennecott's diversification problem (Milliken 6393–94, 6397–98; C. D. Michaelson 5483, 5690).

And third, from a practical standpoint, the order from New York to revise the agreement so as to provide for shutting down the existing mine is inconsistent with any intention to plunge into the coal business. Continuation of the relatively small coal mining operation being conducted by Knight-Ideal was a key element in the WMD proposals. As WMD saw the picture, this would have afforded Kennecott the opportunity to begin on a small scale and expand as circumstances warranted. This approach was plainly rejected by Kennecott's management.

The inconsistencies between the testimony of the corporate executives and the directors on the one hand, and the discussion in CX 67 A–K showing Kennecott's interest in the coal business as such, on the other, are troublesome.[38] However, most of this material was simply copied from Mr. Kinnear's justification of the Knight-Ideal project and expressed WMD's dual interest in a captive operation to help solve its fuel problems and in a pilot operation for possible future expansion into the commercial coal business. It may be plausibly argued that the fact that top management adopted this concept in its subsequent explanation of the Knight-Ideal project to the directors reflected a similar intent on the part of management, but in the examiner's opinion, this is by no means clear. Mr. Milliken was not aware that the material he sent to the Board had been extracted from Mr. Kinnear's letter of June 10, 1965 (CX 63 A–L; Tr. 6353–54).

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[38] For example, despite the plain inference in CX 67–B that Knight Ideal was the first step in an investigation of coal on a nationwide or worldwide basis, Mr. Milliken denied that he had intended to convey such a meaning. And although he first acknowledged that "the fact that we had that . . . captive market, prompted us to make our initial investigation of coal resources," he then insisted that Kennecott "hadn't made any investigation of the coal industry." (Tr. 6407–11.)

In summary, despite the doubts engendered by CX 67 A–K, the facts and circumstances shown by the evidence militate against a finding that by approving the purchase of the Knight-Ideal coal reserves the board of directors voted to put Kennecott into the coal business.

Regarding the intent of management, it may be noted further that both Mr. Milliken and C. D. Michaelson testified that they had made no decision respecting entry into coal until the possibility of Peabody's acquisition was presented in the spring of 1966; and that not only was the possibility of Kennecott's de novo entry doubtful in 1965 and 1966, but it probably would not occur if Kennecott were now required to divest Peabody (Milliken 6356–61, 6366–67, 6390–91; C. D. Michaelson 5465, 5484, 5494–96, 5544, 5548, 5605–06, 5618–19). Such testimony respecting present intention must, of course, be weighed in the light of the circumstances in which it was given—that is, in the course of litigation in which such intent is a crucial issue. Moreover, such testimony was offered and received as essentially relevant to the question whether divesture should be ordered if the acquisition were found to be unlawful. Respondent's counsel questioned whether any procompetitive purpose would be served by a divesting order, if in fact, Kennecott had—and now has—no intent to enter the coal industry de novo (Tr. 5484–92).

f. *Events Subsequent to Knight-Ideal Purchase*

The events subsequent to the acquisition of the Knight-Ideal reserves present the same equivocal pattern that characterized the events leading up to it. Anomalies continued to persist:

(a) A coal subsidiary was chartered, but the operating mine on the Knight-Ideal property was shut down.

(b) Gas rate negotiations with Mountain Fuel Supply Company were reopened, but WMD continued to act as though its original proposals were still viable.

(c) WMD unsuccessfully sought authority for further drilling and engineering work on Knight-Ideal, and with at least the tacit approval of C. D. Michaelson, it continued to explore the possibility of acquiring additional coal lands.

(d) C. D. Michaelson did not approve WMD's requests or proposals for further developmental work on Knight-Ideal, but WMD was not advised by management that the Knight-Ideal coal operations were a dead issue (C. D. Michaelson 5627–28), and, as a matter of fact, C. D. Michaelson acquiesced in WMD's land acquisition efforts.

The facts relating to each of these post-Knight-Ideal developments will be considered in the subsections that follow.

(1) *Coal Subsidiary Chartered.* In connection with closing the Knight-Ideal transaction in July 1965, Kennecott chartered a Utah corporation, Kennecott Coal Company, to hold the coal properties acquired from Knight-Ideal (CXs 75–80; C. D. Michaelson 5687–90). Kennecott Coal Company was authorized by its charter to mine and sell coal and to otherwise operate a coal business, and it joined the National Coal Association as an associate member in order to receive information on developments in the coal industry, but it never engaged in the coal business (CX 93, CX 174–B). An associate member does not produce coal for commercial sales, but it is entitled to all the publications and services of the association (Harry 600–03; RX 1).

C. D. Michaelson was named president, and C. H. Burgess vice president, of this new subsidiary (CX 76–F, CX 80–B; cf. CX 64–B).

Title to the Knight-Ideal properties was transferred to Kennecott Coal Company on July 21, 1965 (CX 79).

(2) *Closing of the Mine.* The record clearly establishes that the purchase agreement dated June 21, 1965 (CX 68 A–I), called for the existing Knight-Ideal mine to be sealed; that the mine was, in fact, sealed; and that no steps were thereafter taken to open a new mine at another site on the property.

Under the agreement, Knight-Ideal Company was permitted to operate the mine on a reduced basis for several months in order to fulfill remaining customer commitments. It was then obligated to shut down the mine, discharge the labor force, dispose of the mining equipment and facilities, and physically close and seal the mine portals in accordance with state and federal mining inspection laws (CX 68 A–I; Kinnear 1980–82). The mine was completely closed and sealed in December 1965 (Ensign 4887; RX 204; CX 91–B, CX 93).

In conferences and in correspondence with representatives of the Knight-Ideal Independent Union, a Kennecott official made it clear that Kennecott had acquired only the coal reserves and had no plans for operating the mine (Flynn 3902–06; Sitterud 2672–74; RX 84 A–C). On August 4, 1965, Kennecott told the union president that Kennecott ". . . cannot continue or commence production immediately after the Knight-Ideal interests leave the property. Nor can we foresee a date in the future when we might start production. Our purchase of these mining properties was for the express purpose of acquiring coal reserves." (RX 85–A; Kinnear 1866–67; Flynn 3906-07; Sitterud 2674.)

Moreover, in dealing with State and Federal Government agencies, Kennecott disclaimed any employment activities at Knight Ideal and evinced interest only in the proper closing of the existing mine. (RPF 354–356.)

A Kennecott press release issued on June 22, 1965, 4 days after the Knight Ideal purchase was approved by Kennecott's board of directors, made no reference whatsoever to Kennecott's going into the coal business, but linked the purchase of the Knight-Ideal coal reserves to Kennecott's own fuel needs. After stating that Kennecott had acquired the coal reserves, but none of the equipment machinery or other operating assets of Knight-Ideal, the release concluded: "A Kennecott spokesman confirmed that Kennecott had contracted to buy the coal reserves from Knight-Ideal, noting Kennecott's continuing needs for low cost sources of fuel and power." (CX 69.)

(3) *Gas Rate Developments.* In September 1965, after Kennecott had acquired the Knight-Ideal coal reserves, a restudy of fuel costs was prompted by an offer from Peabody Coal Company to supply WMD's coal requirements for its Utah and Nevada operations at savings represented to approximate $200,000 annually. (CX 54 A–B, CX 55 A–B; RX 9 A–C; Kinnear 1991–93; S. D. Michaelson 5341–42; Ensign 4897–4915).

It was ultimately concluded, all things considered, that the Peabody offer made a Knight-Ideal operation economically unattractive but that the possibility of a favorable gas rate militated against conversion to coal whether the coal was purchased by or produced by Kennecott (RX 88; RXs 212–214–B; Ensign 4901–09; Kinnear 1991–94).

By November 1965, both Mr. Kinnear and C. D. Michaelson were of the view that Kennecott would not operate a mine if it could purchase coal or gas more cheaply than, or at the same price as, captive coal (Kinnear 1966, 2144–45, see 1901–02;[39] Ensign 4922; C. D. Michaelson 5539–40).

WMD rejected the Peabody offer and, having been authorized by C. D. Michaelson to reactivate negotiations with Mountain Fuel Supply Company (CX 91–B; C. D. Michaelson 5540–42), it decided to concentrate on the I–6 rate proposal (Kinnear 1994–96; Ensign 4913–15; Lee 1660, 1676–78; CX 55 A–B; RX 91 A–B).

Earlier, in the late summer or early fall of 1965, a Mountain Fuel official had inquired whether Kennecott was still interested in the

[39] But see *infra*, p. 854.

proposed I–6 gas rate (Kinnear 1994). The record supports a finding that as a result of Kennecott's acquisition of the Knight-Ideal reserve, Mountain Fuel's management had become concerned and was anxious to work out a suitable gas rate for Kennecott (Work 3011, 3034–36, 3080; Kinnear 1994–95, 2000–01).

Negotiations got under way in late November 1965 and focused on Kennecott's objections to the 10-year term of the contract and its "take-or-pay" and escalation provisions, as well as Kennecott's request that the I–6 gas rate be extended to the smelter (RX 92; Thuli 3268–70; Work 3036–40).

Within a month, Mountain Fuel proposed a revised I–6 rate schedule that was essentially satisfactory to UCD. Although it involved a rate increase, there were compensating concessions that would reduce Kennecott's annual gas cost by about $135,000. Accordingly, in January 1966, UCD indicated its tentative approval. (Work 3040–43; RX 116; RX 94 A–B; RX 108 A–D; compare RX 37–F; Thuli 3271–73.)

Before Mr. Kinnear could act on UCD's recommendations, however, Mountain Fuel decided that it would prefer to try to develop a beneficial I–4 rate for Kennecott within the framework of an impending over-all rate revision (Work 3044–46; Thuli 3273–73).

Such a revision was submitted to the Utah Public Service Commission in the summer of 1967 and, after hearings, was approved in April 1968, effective August 1, 1968 (Work 3046–47, Thuli 3275; RX 109 A–O).

As recounted on page 826, *supra*, the new I–4 rate, although designed for all industrial customers, benefited Kennecott in permitting a lower rate for uses in excess of 200 million cubic feet per month (Work 3047). In comparison to the proposed I–6 rate, the revised I–4 rate results in comparable savings for Kennecott (about $135,000 a year), and there were no long-term or minimum "take-or-pay" provisions (RX 109 A–O; Thuli 3274–75; Kinnear 1995; Work 3051). Mountain Fuel was able to persuade the Utah Public Service Commission to accept a special low rate for Kennecott on the ground that without it Mountain Fuel would not be able to retain Kennecott's gas business (Work 3047–48). Mountain Fuel also urged rate revision in order to permit it to compete more successfully with coal as a fuel for industrial and home heating purposes since coal prices were dropping even though inflation was driving gas costs upward (Work 3052–55; RX 111).

WMD personnel were convinced that Kennecott's acquisition of

the Knight-Ideal coal reserves played a significant part in bringing the gas rate negotiations to a successful conclusion, and Mountain Fuel's rate expert was inclined to agree (Kinnear 2000–01, 2055–56; S. D. Michaelson 5043–44; Work 3011, 034–35, 3080).

(4) *WMD's Proposals for Development and Expansion.* Despite the decision of management and the board of directors to acquire only the Knight-Ideal reserves and to shut down the existing mine, WMD continued along the line of its earlier recommendations.

(a) *The Authorization for Expenditure.* For example, the Authorization for Expenditure ("AFE"—CX 74 A–S) submitted by WMD on July 12, 1965, stated:

> This AFE requests funds to initiate a Kennecott-owned coal operation by purchasing and developing the Knight-Ideal Coal Company reserve in central Utah to supply a part of the Utah Copper Division fuel requirements, all of the Nevada Mines Division fuel requirements, and sales to outside customers. Included in the request are funds to develop, equip and start the mine for producing 1,165,000 tons of coal annually, and funds to install a railway from the surface plant to the D&RGW RR system. (CX 74–A.)

Largely a restatement of WMD's earlier submittals (CX 61 A–Z–18, CX 63 A–L), the AFE also contained such statements as these:

> * * * As a first step in starting a company coal operation, a deposit located near a Kennecott copper-mining operation requiring fuel would be advantageous because supplying this requirement would also permit orderly and economic coal mine development while supplementary outside coal sales were being generated. (CX 74–D.)
>
> * * * * * * *
>
> This annual [captive] tonnage [400,000 tons] provides a sufficient "base load" for an efficient new coal mine on the Knight-Ideal property and a production rate base upon which outside sales could be prudently developed. (CX 74–F.)
>
> * * * * * * *
>
> Progress on this project can be continued without significant interruption because the proposed mine plant is separate from the existing Knight-Ideal plant which may continue to be occupied by Knight-Ideal until approximately July 1966. The expenditure schedule * * * assumes the optimum buildup of outside sales. (CX 74–L.)

The AFE incorporated some of the discussion in CX 63 B–D of the sales prospects for coal generally and in the intermountain and northwest marketing areas. (CX 74–A, D, I–J.) The document also repeated in substance all but one of the reasons given in C–X 63 K–L for the Knight-Ideal purchase, including the language regarding Kennecott's capabilities to become a "significant competitor" in coal

that had been omitted from CX 67 J–K (CX 74 J–K; see *supra*, p. 843).[40] The AFE omitted the reference to holding the property only as a reserve" (CX 63–K, par. 4).

Although the AFE indicates that it was prepared by S. D. Michaelson on July 9, 1965, his signature was actually affixed by his assistant (S. D. Michaelson 5360–61). The AFE was approved by Mr. Kinnear on July 12, 1965, and by C. D. Michaelson on September 16, 1965. Approval of the board of directors was shown as of June 18, 1965—the date of the meeting at which the project was approved (*supra*).

The nature of the document and the manner in which it was handled suggest that it was merely a completion of corporate formalities; that it was based on the original agreement; and that it therefore reflected some of the considerations that were germane only to that agreement. C. D. Michaelson testified that he "obviously didn't read it" but merely checked the figures and the covering summary. (CX 70; C. D. Michaelson 5646–47.)

The AFE was for an allocation of $6,244,000, the exact amount approved by the board of directors on June 18, 1965. This constituted, in effect, a "line of credit" for WMD, but expenditures had to have the approval of C. D. Michaelson (S. D. Michaelson 5357, 5361–63; C. D. Michaelson 5523; Kinnear 1983; Ensign 4984). Kennecott operates on a project basis in that the board of directors requires management to state what the total financial commitment will be in the event every element of a project works out, regardless whether the project might cease before completion (Kinnear 1984, 2066–67; S. D. Michaelson 5361–62; C. D. Michaelson 5521–23). Mr. Kinnear could not enter into financial commitments under the AFE unless he had the approval of C. D. Michaelson for further developmental work (Kinnear 1985–86, 2132–36; C. D. Michaelson 5521–23; S. D. Michaelson 5356–62; Ensign 4984–85).

(b) *Drilling Program Requests.* In line with WMD's original concept of the Knight-Ideal project and the 5-point program outlined in CX 61–G, Mr. Kinnear undertook to get management's approval for activities preliminary to opening a mine and approval for acquiring additional coal lands. (The first point in the 5-point program—the continued operation of the existing mine—had already been vetoed by management, *supra*, pp. 834–35.)

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[40] The AFE repeats the statement contained in CX 63–F but omitted from CX 67–F concerning the advantage Kennecott would enjoy as a result of its "long standing cordial relationships with western utilities and other industrial users." (CX 74–J.)

Despite repeated recommendations by Mr. Kinnear, beginning in July 1965 and extending into May 1966, for the assignment of a geologist and for the institution of a test drilling program on the Knight-Ideal tract and on adjacent lands (CX 71, CX 82, CX 83–B, CX 87–A, CX 96 A–B, CX 97–A), none of these proposals was authorized by C. D. Michaelson, and nothing was done on any development program because Kennecott was not planning to operate a mine. Except for the purchase money paid for Knight-Ideal and funds for incidental expenses, the appropriation was simply not spent. (C. D. Michaelson 5523, 5535–36, 5627–28; Ensign 4874–79; Kinnear 1955–57, 1984–88, S. D. Michaelson 5357, 5361–63; Milliken 6358.)

In summary, not a single step was authorized by management that would advance the possibility of Kennecott's producing coal on the Knight-Ideal reserves.[41]

(c) *Interest in Additional Coal Lands.* Not only in the course of acquiring the Knight-Ideal coal reserves, but thereafter as well, WMD was actively interested in acquiring additional coal reserves (CXs 34–36, CXs 39–40, CXs 45–47–C, CX 49–B, CX–51–C, CX 61–G, CX 83–B, CX 37 A–B, CXs 80–93, CXs 96–97; Kinnear 1928, 1931, 1989–91, 1997–2000, 2136–38; C. D. Michaelson 5625–30; Shields 1373–74; Heiner 2598–2601).

According to Mr. Kinnear, WMD's effort to acquire lands contiguous to Knight-Ideal was for the purpose of enhancing the value of the Knight-Ideal property, offering more flexibility in the mining operation, and providing additional tonnage as coal requirements developed. (Kinnear 1928, 1931, 1989–91, 1997–2000.)

WMD's land acquisition efforts not only had the tacit approval of C. D. Michaelson, but in September 1965 he specifically authorized an offer of $100,000 for a half-interest in lands adjacent to Knight-Ideal (CX 87–A).

Most of the properties considered were adjacent to the Knight-

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[41] As late as May 1966, however, and after Kennecott's management had begun considering the acquisition of Peabody (*supra*, pp. 759–61), WMA was considering a Knight-Ideal coal operation. Because of the probability of a substantial increase in the cost of coal used by NMD, WMD was investigating the feasibility of subleasing some of its coal land to a small operator to produce coal for NMD. Such a decision was contingent upon "proof that adequate mineable reserves of coal for such an operation would be sufficiently remote from the principal coal reserve so that the small-scale lessee work done would not complicate a future large-scale operation." (CX 97–B.)

Possibly pointing in the other direction was WMD's interest in January 1966 in an offer from Knight-Ideal to sell its coal tipple at Wellington (RX 14–EF), but only for its "salvage and scrap value" (CX 93). By April 1966, Kennecott had proposed trading the tipple property for equivalent trackside property (CX 96–A).

Ideal tract [42] or were in the immediate area, but in September 1965, interest was also shown in "additional coal reserves in areas other than [those] surrounding the acquired Knight-Ideal property." (CX 87–B.) In November 1965, jurisdictional boundaries were drawn delineating the areas where coal exploration would be conducted by Kennecott Coal Company and by Bear Creek Mining Company, Kennecott's exploration subsidiary (CX 90 A–C; see CX 87–B).

g. *Competitive Aspects of Kennecott's Coal Activities*

Mention has previously been made of WMD's activities in exploring possible markets for coal and in discussing with coal operators the possibility of joint ventures (*supra*, p. 829).

In addition, despite respondent's denials (RRB–Ex, pp. 67a–68a), there were competitive aspects involved in Kennecott's efforts to acquire coal lands in Utah. There is no evidence of competition for the Knight-Ideal property, but the record supports a finding that in its initial and supplementary land-acquisition efforts Kennecott was in competition with coal producers that were also seeking coal reserves in Utah.

In January 1964, when Mr. Kinnear was undertaking to reactivate the captive coal project, he reported to C. D. Michaelson that Peabody Coal Company had obtained a coal supply contract with Nevada Power Company and that Peabody was seeking reserves to fulfill its commitment. He further noted that Peabody's success in obtaining the Nevada Power contract had had a depressing effect on Utah coal operators. Accordingly, he recommended that this was "the time to move aggressively on the property acquisition phase, while the local operators are pessimistic on business prospects and before Peabody takes over the most desirable reserves." (CX 29–B). There is no evidence, however, of any actual Kennecott-Peabody competition for specific coal reserves.

Similarly, although representatives of Kennecott and Peabody demonstrated interest in coal reserves in the Huntington area of Utah (*supra*, p. 829), the record fails to reflect any actual competition between the two companies for such properties.

WMD actively sought to acquire the Heiner-McKinnon reserves adjacent to Knight-Ideal, but lost out to Island Creek Coal Company. In reports to management, Mr. Kinnear suggested possible strategies to make untenable Island Creek's reserve position vis-a-vis Kenne-

[42] One owner of a half-interest in coal lands adjoining Knight-Ideal declined to sell to Kennecott because he was unable to obtain assurances that a producing mine would be operated on his holdings (Heiner 2598–2601).

cott.[43] (CX 47–B, CX 51 C–D, CX 83–B, CV 87–A, CV 90–A, CX 91 A–B, CX 97–A; see *supra*, pp. 829, 854–55.)

Kennecott also engaged in competitive bidding for coal reserves in Sevier County, Utah (*infra*, p. 861).

In addition to the competitive aspects of Kennecott's activities respecting Utah coal reserves, it is clear that there were competitive overtones in Peabody's reactions to Kennecott's apparent moves toward entry into the Utah coal industry, although there may be some question whether Peabody (or at least its regional vice president, Hugh B. Lee) was more concerned over losing Kennecott as a potential customer than it was over facing Kennecott as a potential competitor (see RRB–Ex, pp. 69a–71a).

In March 1965, Mr. Kinnear reported to C. D. Michaelson as follows:

> Peabody Coal Company . . . has been vigorously trying to convince us through S. D. Michaelson that Kennecott should obtain its coal from them and not open a separate property. Mr. Hugh Lee, Vice President of Peabody, has called on [S. D.] Michaelson four times in the last six weeks and has been frank to stated that Peabody does not want Kennecott in the coal business for either its captive requirements or outside sales. That Peabody is serious about this is indicated by Mr. Lee's unofficial and oral offer to Michaelson on March 4th of a 30,000,000-ton reserve which it has under option in the Huntington Canyon area—on the condition that Kennecott would purchase its coal from Peabody, but would want an unopened reserve for a long-range, defensive position on fuel. (CX 51–D.)

As Kennecott moved toward acquiring the Knight-Ideal reserves and after Island Creek Coal Company also acquired Utah coal lands, Mr. Lee reported to his management in June 1965 that these developments "threatened" the "head start" that Peabody had gained in Utah. As Mr. Lee saw the picture, Peabody had these alternatives:

> 1. Ignore Kennecott and proceed with our own decisions and action.
>
> 2. Promptly make offer to Kennecott for their coal requirements (perhaps coupled with offer of restricted sublease of part of Huntington Corp. property to satisfy Kennecott's desire for defensive position) that is attractive enough to dissuade them from acquiring or operating Knight-Ideal.
>
> 3. Offer to enter into joint venture with Kennecott (Peabody to operate with fee) to put in modern mine in Huntington Canyon or Knight-Ideal area. ([S. D.] Michaelson is receptive.)
>
> 4. Abandon thought of Peabody operation in Utah, place Nevada Power commitment at Kennecott's new mine and function as limited or exclusive sales agent for the proposed mine. (CX 53–B.)

[43] In November 1965, a coal company was reported to be interested in purchasing the land in Wellington upon which the Knight-Ideal coal washing plant was located (RX 14 E–F), but WMD was dubious about selling this land "to assist a possible competitor" (CX 88).

Because Peabody had a contract to supply coal to Nevada Power Company but had no producing mine to service the contract (*supra*, p. 829), Mr. Lee was trying to build up sufficient additional sales volume to warrant opening a Utah mine. If Utah Copper Division's power plant were converted to coal, Mr. Lee estimated that Kennecott would need about 800,000 tons annually, making it a substantial sales prospect. (Lee 1654–57, 1661–64; CX 52 A–B, CX 53 A–B; RX 9 A–C.)

Ultimately, Peabody, through Mr. Lee, made an offer to supply coal to Kennecott at prices that, all things considered, Kennecott found inferior to the proposed new gas rates of Mountain Fuel Supply Company, although at such a level as to make questionable the proposed captive operation on the Knight-Ideal reserves. Mr. Kinnear notified Mr. Lee on November 23, 1965, that Peabody's offer was unacceptable to Kennecott and that UCD intended to continue the use of gas unless Peabody could make a better offer. (CXs 53–55–B, CX 88, CX 91–B; RX 10, RV 91–A; Lee 1671–78; Kinnear 1937–38, 1991–97; S. D. Michaelson 5365–68; Ensign 4897–4915.)

Since Mr. Lee recognized that Kennecott's mining of the Knight Ideal reserves would be dependent upon a captive base load, Peabody cannot be considered to have viewed Kennecott as a competitive threat—or at least an imminent one—after WMD advised Mr. Lee that the UCD power plant was not to be converted to coal. Moreover, there is evidence that despite the prognostications of S. D. Michaelson, Mr. Lee had doubts that Kennecott would operate a Utah coal mine and that he viewed its activities in coal as primarily demonstrating an interest in a "long-range defensive position on fuel." (RX 9–A; CX 51–D, CX 53–B; Lee 1661–78; but note CX 53–B, par 4, *supra*.)

The evidence regarding any specific reaction by Island Creek Coal Company is tenuous. Despite its acquisition of reserves in which Kennecott was interested, Island Creek not only failed to begin operations on these properties but it also closed down the mine on another property it had acquired from Claude P. Heiner. Mr. Heiner, who was associated with Island Creek, saw Kennecott's purchase of Knight-Ideal as "fuel insurance" and thought it unlikely that Kennecott would enter the coal business through a Knight-Ideal operation. (Heiner 2317, 2320, 2600–01, 2636–37; Shields 1368–69; Lee 1654; see *supra*, pp. 829, 855–56.)

In summary, as a result of its various activities respecting coal reserves, coal markets, and existing coal producers and marketers, Kennecott was recognized, at least in Utah, as a potential entrant into the coal business and constituted a competitive factor of sorts.

But whatever the impact this may have had—and the evidence is essentially limited to Peabody's reaction (*supra*)—it is fair to infer that the effect was largely dissipated when Kennecott acquired only the Knight-Ideal reserves, closed down the Knight-Ideal mine, told Peabody it was not going to convert the UCD power plant to coal, and reopened gas rate negotiations with Mountain Fuel Supply Company. As far as the record shows, the activities of WMD and management that appeared to be inconsistent with this public posture (*supra*) were not generally known outside the Kennecott organization.

There is no evidence to support the claim of complaint counsel that the steps that Kennecott had taken toward becoming a coal producer had a "substantial impact" and "caused reverberations and reactions throughout the coal industry." (CRB, pp. 2–3.) Nor is there substantial record basis for the claim that Kennecott "presented a present market alternative to consumers of coal," so that no western coal company "could set its prices without considering Kennecott's potentiality, and no consumer . . . would accept a significant increase in prices without first considering the opportunity to purchase from Kennecott." (CRB, p. 17.)

As a matter of fact, one of the leading coal consultants testified that although in the coal industry publicity is generally given to new entrants ("anything that is significant is passed around and it is known very quickly"), he did not know in the summer of 1965 that Kennecott had bought Knight-Ideal. He was doubtful that this fact was known in the coal industry and said that, in any event, it would have been of only "minor interest." He did not learn of Kennecott's ownership of Utah coal reserves until the summer of 1967, when he was employed by Kennecott in connection with the Peabody acquisition. (J. Weir 4345–46.)

3. *Coal Vis-a-vis Other Diversification Possibilities*

In July 1964, when the oil industry was considered the best avenue for diversification, Mr. Milliken listed six other etractive industries that might meet at least some of Kennecott's criteria for diversification—(1) "a relatively high rate of return on investment;" (2) "long range, relatively steady growth performance;" and (3) "related in basic management concepts to those with which Kennecott is acquainted." (CX 11, pp. 2–3.)

In the report on "Investigation of Entry into Oil Industry," dated July 6, 1964 (CX 11), Mr. Milliken listed other industries that had been considered at various times in the recent past. As to coal, the report (par. (3)) stated:

Coal mining has possibilities and should continue to receive attention, however its return on sales is much lower than is Kennecott's and its return on investment has been less, although there has been some recent improvement. We are studying a western coal mining operation, having as a base captive use of coal at our mining properties. (CX 11, p. 3.)

Regarding this reference to a study of a western coal mining operation, Mr. Milliken testified that he "knew that in the west they were concerned about acquiring coal to help them in their fuel situation at the Utah operation." (Tr. 6319.) He knew that WMD was "considering a possible acquisition of coal reserves either to mine as a replacement of gas, or else to use with the gas company to make them get realistic"—"to provide coal as a hedge against gas prices" (Tr. 6321, 6379–80). He did not then know what properties they were considering, nor did he know of the extensive correspondence between C. D. Michaelson and Mr. Kinnear during 1963 and 1964 (Tr. 6312–22).

At that time, he testified, the consideration of diversification into oil precluded diversification into any other field (Tr. 6320, 6330, 6391 ;see C. D. Michaelson 5463–64, 5603). However, the minutes of the meeting of Kennecott's executive committee on July 13, 1964, reflect that "Consideration has been and is being given to aluminum, coal and fertilizer," with "the most intensive study" focused on petroleum (CX 12 A–B). And the record confirms that coal continued to be a subject that received increasing attention.

The status of other diversification possibilities was listed in C–11 as follows:

(1) The refractory metals industry, "because of small size," was considered "inherently unable to solve either of the basic problems" that Kennecott faced, but "modest efforts in this area" would be continued and expanded.

(2) In the case of aluminum, the cost of facilities made entry "almost prohibitive."

(3) Fertilizer offered "attractive prospects for return on investment and moderately good return on sales," but this industry was being considered as "a desirable feature of an integrated oil company."

(4) Cement mining and manufacturing was viewed as quite competitive, with "declining returns on investments and sales."

(5) Iron mining was "not believed to be attractive on a non-captive market basis." (CX 11, p. 3.)

Other "growth" industries, such as chemicals (except fertilizer), drugs, electrical equipment, electronics, and office equipment, were negatively viewed at not "related in basic management concept" to Kennecott's existing business (CX 11, p. 4).

On the basis of this analysis as well as other evidence (C. D. Michaelson 5464–66, 5602–03; Milliken 6319–20, 6390–91), it is apparent that once the effort to acquire an oil company came to naught, coal was the next porduct area for serious consideration.

4. *Interest in Coal Exploration*

At a meeting on July 29, 1965, Mr. Milliken discussed the "Commodity Objectives" of Kennecott's exploration department with C. D. Michaelson and C. H. Burgess, the vice president for exploration. Although Mr Milliken mentioned that there would be a coal division under Mr. Michaelson, which might carry out exploration, he had decided that exploration for coal should be the responsibility of the exploration department, and he asked Mr. Burgess to have the department conduct a systematic exploration for coal and fertilizer materials in order to gain knowledge about these products for the purpose of diversification. (Milliken 6361–62. 6401–03; CX 81 A–C; C. D. Michaelson 5480–81.)

In the discussion of coal, Mr. Milliken alluded to the fact that Paul Shields had been engaged as a consultant on coal in Utah,[44] and he raised the question of Kennecott's obtaining the services of a coal consultant who might advise the company on coal in the United States and elsewhere. Mr. Burgess suggested the Paul Weir Company of Chicago, a leading coal consulting firm with which he was familiar. (CX 81 A–C)

The memorandum of the meeting (prepared by Mr. Burgess) reported a discussion of "the possible acquisition of coal companies as such rather than the purchase of reserves or the discovery of reserves," and Mr. Burgess observed that "the acquisition of companies would make for faster progress" (CX 81–A). In the discussion of coal companies that might be purchased, Mr. Milliken mentioned Peabody and Island Creek. According to Mr. Milliken, however, the discussion was not directed at acquiring a coal company because Kennecott had not then made a sufficient analysis of the coal industry to know whether the acquisition of an existing company or the acquisition of coal reserves would be the way to become active in coal. There had still been no decision to enter the coal business. (CX 81–B; Milliken 6362–63, 6401–03; C. D. Michaelson 5481.)

Despite the assignment by Mr. Milliken of specific responsibilities for coal to his two vice presidents, this did not necessarily mean any final decision had been made by Kennecott to go into the coal

[44] The memorandum of the meeting (CX 81 A–C) contains no specific reference to Knight-Ideal, although the meeting was held about a month after the purchase.

business. The acquisition of an oil company was still under consideration, but looking ahead, Mr. Milliken wanted more information on coal if diversification into oil failed to materialize. He wanted to prod Mr. Burgess into a study of coal reserves, to get him "active" in coal. (Milliken 6361–62, 6401–03; C. D. Michaelson 5480–81.)

If this meeting had reflected a clear-cut decision to enter the coal industry, Mr. Burgess' memorandum doubtless would have said so. Interest in coal was growing, but the nature of the memorandum, the reference to retaining a coal consultant, and the fact that Mr. Burgess was directed to look at fertilizer materials and sulphides and to seek information about iron ore reserves as well, tend to confirm the testimony that diversification into coal was still an open question. (CX 81 A–C.)

Although Mr. Milliken stated that he would approve additional funds to finance the search for coal and fertilizer materials (CX 81–A), the record shows that Kennecott's 1966 exploration budget of nearly $8 million included only $9,750 for a western states coal study, of which only $6,454 was actually spent (CX 3–D, H; Milliken 6401–02).

The only specific project that resulted from Mr. Milliken's assignment of coal exploration responsibility to Mr. Burgess was a bid (far out of line with the winning bid) on federal coal leases in Utah.[45] In early December 1965, Kennecott's exploration department received from its Salt Lake City office a request for a supplemental appropriation of $48,000 to bid on some coal lands located in the Wasatch Plateau area of central Utah in Sevier County, west of Emery County, which were being offered by the U.S. Bureau of Land Management (CX 92 A–B). The request was approved by the vice president of Kennecott's exploration department and by Mr. Milliken (CX 92 A–B; Milliken 6365, 6398–6401). Kennecott officials testified that they approved the request on the basis of Mr. Burgess' representation that such additional reserves would reinforce Kennecott's reserves in central Utah in case it ever decided to open up coal operations there for use by UCD (C. D. Michaelson 5481–82, 5659–62; Milliken 6364–65, 6398–6401).

However, the location of these reserves in relation to Knight-Ideal, their size, and the specific justification for their purchase indicate that Kennecott's interest in such coal lands was broader

[45] Jurisdictional boundaries were also established delineating the areas where coal exploration would be conducted by Kennecott Coal Company and by Bear Creek Mining Company, Kennecott's exploration subsidiary (CX 90 A–C, CX 87–B).

than as a back-up for captive use of the Knight Ideal reserves. The Authorization for Expenditure (CX 92 A–B) made no reference to Knight-Ideal nor to possible captive use of these reserves. Instead, it referred to the area as having "good potential for providing fuel for any power generating facility built in Central Utah" and specifically mentioned that Utah Power & Light was considering construction of a generating plant somewhere in central Utah "so that control of substantial coal reserves and adequate water supplies would be extremely valuable." The document went on to discuss the apparent practicability of "a mine-mouth power generating facility with an annual consumption in the range of 5,000,000 tons of coal." (CX 92–A.)

Kennecott submitted a bid of about $4 an acre on the properties, while other bids ranged from $17 to $36 an acre (RX 223). This discrepancy was cited as a measure of Kennecott's lack of knowledge about the value of coal lands in Utah (Milliken 6365; C. D. Michaelson 5482).

Once again, the evidence is equivocal on the ultimate issue of do novo entry. Whether or not there was some misunderstanding of the relationship of these reserves to a possible captive coal operation (Milliken 6398–6401), the record is clear that Kennecott was interested in obtaining additional coal reserves that could be used in making coal sales. It does not necessarily follow, however, that this meant imminent de novo entry into coal, since, as this record shows, many companies are making long-range investments in coal reserves. Moreover, the unrealistic nature of Kennecott's bid was another factor that raised doubts as to its readiness to go into the coal industry on its own.

As far as the record shows, after losing out in this bidding, Kennecott made no further efforts at any subssequent time to acquire additional coal reserves in Utah.

5. *The Search for a Coal Executive*

Following the July 29, 1965, meeting, C. D. Michaelson, in September 1965, retained the management consulting firm of Booz, Allen & Hamilton, Inc., to recommend a senior coal executive whom Kennecott might employ. Like so many other aspects of this case, the evidence regarding the purpose for which such a person was to be employed is somewhat equivocal. Both the individuals concerned (C. D. Michaelson and John R. Harman, Jr., of Booz, Allen) testified to the effect (1) that Kennecott wanted a senior coal executive about 40 years of age, with broad experience and

knowledgeable in all facets of the coal business and with advisory and managerial capabilities similar to those of Gordon Fisher (*supra*, p. 812), who could join Kennecott's staff to aid its management in evaluating the coal business for the purpose of ascertaining whether Kennecott should diversify into this area and, if so, to guide the company in a substantial diversification move; (2) that, at the time, no decision had been made to enter the coal business; (3) that Booz, Allen was not asked to advise Kennecott whether to enter the coal business; and (4) that Booz, Allen's assignment did not relate to Kennecott's acquisition of the coal reserves of the Knight-Ideal Coal Company in Utah. (C. D. Michaelson 5470–73, 5676–77, 5685; Harman 5699–5705, 5723–33; see Milliken 6360–61; compare CX 84 B–G.)

However, a letter from Booz, Allen dated September 13, 1965, to C. D. Michaelson and the personnel specifications that accompanied the letter (CX 84 B–G) are open to a different interpretation. The letter confirms arrangements for Booz, Allen "to undertake a search for a senior executive to lead [Kennecott] into the coal business." It reflects Booz, Allen's understanding that Kennecott had acquired some coal properties [46] and anticipated entering the coal industry "with a major effort", eventuating in a business with annual coal sales of $100 million to $200 million that would yield annual profits (before taxes) of $10 million to $12 million. (CX 84–B.)

Booz, Allen further understood that Kennecott was looking for a man "technically qualified but with experience in marketing, acquisitions, exploration and property development." The salary was not fixed but was expected to be in the range of $50,000 to $75,000. (CX 84–B.)

The personnel specifications were for a "Chief Executive" of a "Coal Subsidiary." The man for the job was to be equivalent to a top vice president of a coal company with over $100 million in sales or a president of a smaller coal company. He should "have the drive to develop and guide a significant new enterprise within the coal industry" and should be adept "at identifying and developing new properties." He would be responsible "for building a new

[46] Mr. Harman testified that he knew that Kennecott had acquired a coal property in Utah—"some minor property out in the west"—but he understood from C. D. Michaelson that Kennecott had no thought of building a business on the basis of this property (Tr. 5702–03, 5723, 5729–31). C. D. Michaelson "felt that the acquisition of properties would be too long and drawn out and difficult and take too much time to build a significant business that way." (Tr. 5730; see Milliken 6360.)

coal business on the soundest possible basis, whether it be through the acquisition of small companies, or the acquisition and development of coal properties." (CX 84–D, F.)

Although Mr. Harman conceded that CX 84 B–G was open to the interpretation that his search was for a man to head up a Kennecott coal operation,[47] he explained that Kennecott was "considering getting into the coal business' and since it had no coal experts among its executives, it "wanted someone who could give them senior guidance and leadership and to run a coal business if they procured one." (Tr. 5700–01, 5720–21, 5727.)

According to Mr. Harman, Kennecott was undertaking a study of whether to get into the coal industry, just as it had made to search for was to perform the same function for Kennecott as Gordon Fisher had performed (*supra*, p. 812), except that the subject matter would be coal rather than oil (Tr. 5703, 5733).

Regarding the use of the term "coal subsidiary" in the personnel specifications, Mr. Harman was referring to a subsidiary that might be developed de novo or one that might be acquired. Mr. Harman believed that Kennecott would get into coal through the acquisition of one or more coal companies, but the possibility of Kennecott's acquiring reserves and going into the coal business on its own was not "absolutely" excluded from consideration. (Tr. 5704–05, 5722–24.)

A 3-months search failed to produce a suitable candidate (Harman 5705–11, 5715–17, 5728–29; C. D. Michaelson 5475, 5654–58), and Booz, Allen finally told C. D. Michaelson that the only way for Kennecott to get a coal executive was to acquire a coal company—that if Kennecott was to get into the coal business, "the way to do it was through acquisition." Mr. Harman agreed that the net of Booz, Allen's advice involved the anomaly that it could not find anybody for Kennecott to help it make the decision on whether to go into the coal business except by making the decision. The recommendation that Kennecott acquire a coal company was

[47] The confirmatory letter contained a caveat that the parties had "not mutually developed precise qualifications for candidates" and that these would be developed as the assignment proceeded (CX 84–B). Moreover, Mr. Harman testified that the confirmatory letter and the personnel specifications did not constitute "a legal kind of document." Regarding the specific words in CX 84 B–G, Mr. Harman testified that "we didn't hash all of these things out." CX 84 B–G did represent his understanding as a result of his hour-long conversation with C. D. Michaelson (Harman 5725), and there is no evidence that C. D. Michaelson indicated that such understanding was erroneous. However, in denying that the man described was wanted to head up the Knight Ideal operation, C. D. Michaelson testified that Booz, Allen might have misunderstood its assignment (Tr. 5676–77; see Tr. 5685, 5690–93).

triggered by the fact that one suitable candidate was available only through the acquisition of his company, which appeared to be the kind of company through which Kennecott could have entered into the coal industry in a significant manner. (Tr. 5728–32.)

C. D. Michaelson agreed that Booz, Allen should look at coal companies. Booz, Allen examined a number of leading coal companies and prepared for C. D. Michaelson an analysis of the top executives and staff of each company, together with basic operating data about each company. Only two coal companies were suggested by Booz, Allen to C. D. Michaelson, who rejected both. (RPF 57–59.)

In the course of its assignment for Kennecott, Booz, Allen did not have any discussions with Peabody Coal Company concerning acquisition by Kennecott. In looking for a coal executive, Mr. Harman personally interviewed one senior executive with Peabody, but he concluded that this executive's experience was not broad enough to meet Kennecott's specifications.[48] (Harman 5719–20.)

Booz, Allen "would have loved" to make a study for Kennecott on the advisability of entering the coal business in some fashion rather than simply suggesting the acquisition of a coal company, but C. D. Michaelson "wanted to get a man on his own staff" (Tr. 5733). Booz, Allen had coal experts in its organization or at least people who were familiar with the coal industry, but Mr. Harman doubted that they would fit the specifications drawn up for Kennecott. In any event, the search did not extend to Booz, Allen's own organization, nor did Booz, Allen inquire of any private coal consulting firms during the course of its investigation (Tr. 5733–34.)

In confirming C. D. Michaelson's testimony that at the time Booz, Allen was retained, Kennecott had not decided to enter the coal industry through Knight Ideal or otherwise, Mr. Milliken said he doubted that he was even aware of Booz, Allen's search for a coal industry through Knight-Ideal or otherwise, Mr. Milliken said 6391–96; see Tr. 6299).

6. *The Focus on Peabody*

In the early spring of 1966, Kennecott's increasing interest in coal led C. H. Burgess, respondent's vice president for exploration, to follow up on the suggestion he had made at the conference of July 29, 1965, that Kennecott should consult the Paul Weir

[48] Complaint counsel's suggestion that Kennecott contends it bought Peabody for the purpose of obtaining a coal executive (CPF–Br, p. 92) is frivolous.

Company regarding coal (*supra*, p. 860). It was this consultation with the Paul Weir Company that ultimately resulted in Kennecott's acquisition of Peabody.

On March 17, 1966, pursuant to advance arrangements, Mr. Burgess met with Clayton G. Ball, president, and Paul Weir, chairman of the board of Paul Weir Company, for several hours and indicated that Kennecott was "seriously interested in . . . 'getting into the coal industry.'" The discussion related to the ways in which Kennecott could get into the coal business, that is, either by acquiring reserves and starting a new company or by acquiring a going company with large-scale reserves. (CX 94 A–B; Ball 4304–06.)

According to Mr. Burgess' memorandum to Mr. Milliken regarding this meeting (CX 94 A–B), "Weir emphasized that reserves per se are not worth going after unless one has an organization to produce the coal and a market for it. Ball concurred with this point of view as a general proposition, but he did suggest that if one were looking for long term reserves as a possible basis for gasification instead of the current uses, he might well tie up reserves in a deeper part of the basin in, say, Southern Indiana. . . . [I]t might be a speculative possibility to consider." (CX 94–A.)

Mr. Ball pointed out that it would be very difficult and time-consuming to find the proper reserves and the proper location to create a business entity that could enter into competition with existing coal companies. He also emphasized that a new company would need to find, secure, and build up an operating staff "and that the opportunity for doing that would be extremely limited" (Ball 4307–08, 4328).

Paul Weir likewise mentioned the problems associated with direct entry, including the shortage of qualified personnel, the limited availability of large-scale economic reserves, and the time and difficulties involved in acquiring utility customers (P. Weir 4385–88).

Paul Weir and Mr. Ball "both stated—and stated repeatedly—that [Kennecott] shouldn't go after 'cats and dogs;'[49] with equal frequency, they reiterated that the available opportunities [had] been picked over. * * *" (CX 94–A.) Paul Weir also mentioned that if Kennecott wanted "to go overboard," it might consider Peabody, which had just terminated acquisition negotiations with Cerro Corporation (CX 94–B P. Weir 4384–85).

[49] John P. Weir characterized the Knight-Ideal mine as a "cat and dog"—"a very small company, with very limited coal reserves, which would not be of a sufficient magnitude of sufficient low cost to form a base for anything." (Tr. 4344.)

Both Mr. Ball and Paul Weir advised Mr. Burgess that the best means of getting into the coal industry would be an acquisition of an appropriate company (Ball 4306; P. Weir 4385).[50] According to Paul Weir, what Mr. Burgess asked him "was about a coal company that might be available for acquisition. * * *" (P. Weir 4388.)

Mr. Ball did not express it in exactly this way, but he understood that Mr. Burgess was talking about "getting into the coal industry on a sufficiently large basis to be attractive to a large mining company such as Kennecott." Mr. Ball also understood that Kennecott wanted "to get into the coal industry as an active participant, not in terms of a longterm investment for future years of operation" but their purpose "was to get into the industry relatively immediately. * * *" (Ball 4304, 4306.)

As outlined *supra* (p. 759), arrangements were soon made for Kennecott and Peabody representatives to confer. Kennecott did "go overboard" and get into the coal industry "relatively immediately."

However, it is worthy of note that as late as July 1966, when Kennecott's management was recommending to the board of directors the acquisition of Peabody (CX 154–K), there were indications that diversification into other product lines, including oil and aluminum, was still a possibility (CX 154–C). This tends to show that no decision to enter the coal industry either on a de novo basis or by acquisition, had been made earlier.

E. CAPABILITY OF DE NOVO ENTRY

The fact that Kennecott's management felt that it lacked the capability even to evaluate opportunities in the coal business unless it hired a new executive for that purpose (C. D. Michaelson 5469–71; CX 81 A–C Harman 5699–5705, 5724–27, 5731–33) suggests that coal could hardly be termed a "natural avenue of diversification" [51] for Kennecott. There are marked differences between the coal industry and the copper industry, but there are relationships between the two that give to Kennecott certain technological capabilities for de novo entry. However, as will be shown, there were many negative factors militating against de novo entry (*infra*, pp. 870–84). Obviously, Kennecott had special incentives to expand into coal, but balancing the factors involved as of 1963–66, the examiner finds that they pointed more to entry by acquisition than to de novo entry. (See *infra*, pp. 898–903.)

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[50] Mr. Ball and Paul Weir referred to the then-pending transaction whereby Continental Oil acquired Consolidation Coal Co., as well as to coal acquisitions being considered by other companies (CX 94–A).

[51] *FTC* v. *Procter & Gamble Co.*, 386 U.S. 568, 580 (1967).

1. *Relationship between Copper and Coal*

Since coal mining and copper mining are both extractive industries, they are "related in basic management concept" (CX 11, p. 3), just as two manufacturing industries might be said to be related in basic management concept, as distinct from retail stores; and this fact accounted for coal's being considered one of a number of possible areas of diversification for Kennecott (Milliken 6313–14, 6319–20; C. D. Michaelson 5454, 5458–59, 5465–66). Respondent concedes (RB 42) that the mining of copper and the mining of coal are sufficiently alike as extractive industries to give Kennecott's management and board of directors the confidence that they could understand and evaluate the performance of a coal operation.

Copper and coal are not related geologically, and the problems involved in exploring for each are different and require different skills. Coal is plentiful, and its deposits extend over large geographic areas. (Phelps 3434–35; C. D. Michaelson 5442–44.) The general location of coal deposits in the United States is well known (Phelps 3412–13), with coal beds underlying about one-ninth of the area of the United States (CX 195). With coal, the principal exploration problem is assessing the quality and depth of particular deposits and determining whether the costs of mining and transporting the coal to a given consumer area permit profitable exploitation (Phelps 3412–15; Mullins 3560–61; Kelce 3683; Fox 6134–36).

Copper deposits are generally found in igneous rock of a crystalline nature, either confined in channels ("lode or vein" copper) or diffused widely throughout the surrounding rock ("porphyry copper"). Significant copper deposits are usually concentrated in small geographic areas, are irregular in shape, depth, and quality, are few in number, and are difficult to locate. (RX 13–C(1);[52] Phelps 3434–35; C. D. Michaelson 5444). There has not been a major copper discovery in the United States in the past 50 years. Kennecott, for example, has been engaged in an extensive copper exploration program for more than 20 years, but it has discovered only two new deposits that may warrant development (C. D. Michaelson 5426–28; Milliken 6301).

Coal is almost never found in the same locale as copper. Copper deposits are thicker than coal deposits but usually lie under deeper overburden. Thus, copper deposits 4,000 feet deep are regularly explored, whereas coal deposits with more than 1,000 feet of overburden

[52] RX 13 A–Z–1 contains two pages marked as RX 13–C; the examiner has distinguished them by marking the first as RX 13–C(1) and the second as RX 13–C(2).

are generally considered not to be economically mineable. (RX 13–C (1), RX 13–F; Macke 3785; C. D. Michaelson 5443–44.)

As far as mining techniques are concerned, there are obvious similarities between the mining of copper and the mining of coal, but there are marked differences as well. As might be expected, complaint counsel have emphasized the similarities; respondent, the differences.

Kennecott's Bingham Canyon Mine and Peabody's River King Mine—both physically inspected by the examiner—graphically demonstrate the use of parallel equipment and parallel operating techniques. As paraphrased from complaint counsel's proposed findings (CPF 60–66), the parallels are these:

Kennecott is the largest domestic copper mining company. Its Bingham Canyon mine, near Salt Lake City, Utah, is the largest man-made excavation in the world. From it are removed, every day, in excess of 1/3 million tons of ore and waste. Removal of the overburden is accomplished by drilling, blasting, loading, and hauling. The operation includes an electrified railroad which Kennecott built in the mine and which is relocated as blasting and ore removal require. Kennecott removes 39.4 million tons of ore from its Bingham mine each year. (RX 13 B–F, RX 13–X.) To obtain approximately this amount of copper ore, Kennecott expected in 1969 to strip more than 90 million tons of overburden (RX 13–C(2), RX 13–X).

The Bingham mine employs nearly 2,800 persons. Equipment in use includes 94 trucks (with a capacity of from 65 tons to 110 tons), 8 large rotary drills, 8 small rotary drills, 36 power shovels (with a capacity from 6 cubic yards to 15 cubic yards), 85 electric trolley locomotives, 1,000 100-ton ore cars, and 208 70-ton (40 cubic yards) sidedump waste cars. (RX 13 C(2)–E, RX 13 W–X.)

The Bingham mine is about half a mile deep and more than 2½ miles wide (RX 13–X). Exploratory drilling may be as deep as 4,000 feet (RX 13–C). The Bingham mine is so vast that, at full activity, one viewing it from the top obtains the impression that there is no activity at all. (Thuli 3323; RX 117.)

Peabody, the largest producer of coal in the United States with production in 1967 of more than 59 million tons (RX 171), operates both strip and underground coal mines in the United States (RX 11 A–I, RX 12 A–G). Its River King mine is one of the largest strip coal mines in the United States, with annual production of about 5.8 million tons (RX 11–B). The coal is mined with the same basic steps as copper: drilling, blasting, loading, and hauling (RX 11–G, RX 13–C(2)).

Peabody's River King mine employs about 300 persons (RX 11–D). Equipment utilized at its 2 pits include 2 drag lines (with bucket capacity of 30 and 37 cubic yards, respectively), one custom-built stripping shovel with a 140-cubic-yard bucket, 3 loading shovels (with capacities ranging from 7½ cubic yards to 18 cubic yards), 3 drills, 16 haulage trucks (with capacities of from 50 to 120 tons), and 3 80-ton truck trailers (RX 11 E–F).

Overburden at River King averages 80 feet over a coal seam averaging 6 feet in thickness (RX 11–C).

Thus, as far as open-pit copper mining and strip coal mining are concerned, there are marked similarities, and the differences relied on by respondent (RPF 250) are not persuasive.

Similarly, the differences in processing copper ore and coal, once each mineral has been removed from the ground (RPF 251), support complaint counsel's contention that the strip mining of coal is more simple and less sophisticated than open-pit copper mining.

At any rate, it is difficult to conclude that strip mining of coal is beyond the capabilities of the corporate organization that has developed and has operated the Bingham Canyon copper mine.

In underground mining, the picture is not so clear. Although Kennecott is experienced in underground copper mining at its El Teniente mine in Chile, the record does not clearly establish any parallel between that operation and underground coal mining. As a matter of fact, underground coal mining involves many special problems that are not encountered in underground copper mining; for example, in coal mining there are special ventilation and access problems because coal is flammable and is often accompanied by suffocating and explosive gases and dust. These conditions are rare in an underground copper mine. (S. D. Michaelson 5011.) Ninety percent of underground coal mines use the room and pillar system of mining, while few, if any, copper mines use this system (Phelps 3435). Also, in underground coal mining, there may be special support problems, particularly if the coal is covered by a heavy overburden. (Von Storch 2980–81; Phelps 3512–13; Macke 3785–86.) Coal is softer, less abrasive, and lighter than copper and thus requires different methods of mining and materials handling than copper ore (S. D. Michaelson 5011–12).

Underground coal mines are of limited height but of large lateral extent, while underground copper mines are confined to smaller areas and are generally more vertical than horizontal. The overburden support problems are therefore totally different. Coal requires little

drilling or blasting in comparison to copper and is more apt to be mined by continuous miners or mechanical cutters. (C. D. Michaelson 5442–43.)

2. *Differences in Marketing*

It is in marketing that the contrasts between coal and copper are most pronounced. For coal, marketing is the most important part of the competition for sales to electric utilities. It demands managerial personnel experienced in the areas of land acquisition, geological exploration, mining engineering and operation, transportation, market analysis, sales, and finance. The complexities of coal marketing are discussed in detail *supra* (pp. 783–88).

The marketing of coal to electric utilities is a highly sophisticated process involving exacting estimation of mining costs over the life of the property, imaginative and persistent attention to securing the lowest possible transportation costs, an understanding of the economics of electric power generation, and the ultimate capability of making sales proposals for large-volume, long-term contracts in intensive price competition with other coal producers and suppliers of other fuels. (Christensen 5185–86; Phelps 3409–22; Mullins 3556–62; Fox 6134–36.)

The marketing of copper is an entirely different process from the marketing of coal. A high-grade copper deposit may be mined economically regardless of location, while a reserve of high-quality coal may have very little value if it is not located near a source of demand. This difference in economics is due to the higher value of copper per ton ($800 for copper against about $4 for coal), which permits copper to absorb much greater transportation costs. (Phelps 3437, 3439.) Thus, it is not necessary for copper producers to give transportation costs anywhere near the same attention given them by coal producers.

Copper is a fungible commodity sold at a delivered price which is usually the same to all customers. Outside the United States, the price is usually based on the auction market at the London Metal Exchange. (C. D. Michaelson 5430–32; Milliken 6302.)

In recent years, the demand for copper has exceeded the supply so that copper producers have had to allocate copper among their customers. Kennecott employs only two or three salesmen, who merely service existing customers. They do not really look for new customers. The sale of copper does not require the complex technical knowledge and variety of skills needed to sell coal. (C. D. Michaelson 5429–32; Milliken 6302–03.)

3. *Comparison with Utah Construction & Mining Co.*

To support their contention that Kennecott was capable of de novo entry into the coal business, complaint counsel rely heavily on the history of Utah Construction & Mining Co. and the opinions of Albert L. Reeves, its senior vice president, secretary, and member of the board of directors (Tr. 1202; CPF 74–82, 84, 87; CPF–Br, p. 60). Although the facts regarding the de novo entry of this company into the coal busines are of some probative value, there obviously are limitations on the conclusions that may be drawn from such an analogy, even had the facts been developed in greater detail than they were. Moreover, Mr. Reeves, although knowledgable about the company's operations, was not qualified to testify on the technical aspects of mining (Tr. 1202–94, 1266–67). The facts developed through the testimony of Mr. Reeves may be summarized as follows:

Utah Construction has been in business since 1900 and has been primarily engaged in "heavy construction" and "earth-moving" ever since. It has built railroads and dams, including Grand Coulee Dam and the Hoover Dam (Tr. 1204–06). It entered the mining field in 1943 by taking on a stripping and mining contract for two coal mines in Pennsylvania. Five years later it went into mining for its own account with a small metallurgical coal mine in Arkansas. It has engaged in iron ore mining, both on a contract basis and for its own account. Its construction activities increasingly involved considerable underground work, which became something of a specialty with the company (Tr. 1206). Through an affiliate in which Utah Construction has a 25 percent interest, one company is interested in copper mining in Arizona. The Arkansas operation was a relatively small one, producing about 100,000 tons a year, and operations were discontinued about 1960 when the reserves were exhausted (Tr. 1206–07, 1209–10). Utah Construction began extensive investigation of western coal properties about 1951 (Christiansen 5170–72), obtained a prospecting permit to drill the Four Corners reserves in New Mexico in 1953, obtained a lease on this property in 1957, contracted to sell coal from these reserves in 1960, and made its first deliveries from the mine in 1963 (Reeves 1207, 1209–10). When this mine, a strip mining operation, reaches its anticipated maximum production, it is expected to have the largest output of any coal mine in the United States (Tr. 1216). Not only has Utah Construction been engaged in coal mining and iron ore mining, but it has also engaged in uranium mining and is exploring the possibility of copper mining (Tr. 1206–07).

In stating that these mining activities, including coal mining, are

related to one another and to the other construction activities of the company, Mr. Reeves explained hat this was in the sense that "the company has a basic skill which is a skill in moving materials in quantity at low cost, and the adaptation of that skill to mining from construction was not a very long step to take." (Tr. 1213.)

According to Mr. Reeves, Utah Construction's mining engineers and geologists are capable of exploring, drilling, and developing mineral and fuel deposits and are used interchangeably on copper, uranium, iron, and coal. The same personnel can open and operate the various types of mines. (Tr. 1226–28, 1257–58.)

Although it appears that certain key personnel supervising the coal mining activities of Utah Construction had had no coal mining experience before joining Utah Construction (CPF 79), the record fails to show whether they had been involved in earlier coal mining activities of the company (compare RRB–Ex, p. 35a).

Complaint counsel propose a finding (CPF 82) that the "expertise developed in materials handling, such as construction and mining, would enable a firm with no experience in opening and operating an underground coal mine to do so." This is rejected as unsupported by the record citation (Reeves 1323). The cited testimony was simply to the effect that in 1965 Utah Construction could have opened an underground mine and could do so now. Earlier, Mr. Reeves had said that it was not a very long step to take to adapt to mining the basic skill of materials handling (Tr. 1213). He stated further that materials handling expertise in general is "more relevant to strip mining, but considering the extent of our underground experience in construction, some of the main techniques are applicable for underground mining purposes." (Tr. 1313.) He made no claim that just the moving of materials in large quantities is itself a qualification for underground mining. He repeated that the principle is more applicable to the adaptation of surface construction methods to strip mining and removal of overburden. He explained further that Utah Construction had skills adaptable to underground mining because it "had accumulated considerable experience" in "very ex[t]ensive underground work that may be involved in large tunnels or underground powerhouses," which were "a kind of specialty of the company." (Tr. 1314.)

As of 1967, Utah Construction had gross assets of $178,148,275 and a net income of $16,543,318 (RX 8, pp. 1, 22). Complaint counsel would, of course, compare these figures to those for Kennecott (CPF 84–85; *supra*, pp. 755–56).

With one exception, all of Utah Construction's ventures into min-

ing were on a de novo basis through internal growth. The exception was the acquisition of a uranium mining company. (Reeves 1207, 1236, 1315–16.)

The net of Mr. Reeves' testimony is that the "fundamental expertise" in materials handling and in earth-moving of a well-established heavy construction company with vast experience, some of which is quite specialized, bears some relationship to strip and underground coal mining and that, likewise, earth-moving and materials handling skills are involved in copper mining. The inference that the basic skills of copper mining are readily adaptable to strip or underground coal mining rests on a somewhat shaky foundation.

To put the Utah Construction analogy in perspective, it may be noted that the company did not plunge into the giant Four Corners project as a completely de novo entrant. It had been engaged in coal mining operations on a small scale for about a decade, and some 10 years had elapsed between the time the prospect permit was obtained for Four Corners and its first coal delivery from its first, and still its only, mine. (See *supra*, p. 787.)

4. *Availability of Coal Personnel*

Every witness who was examined about the availability of knowledgeable personnel in the coal business testified that experienced coal personnel have not been readily available during the 1960's (Shields 1374; Phelps 3462–65; Mullins 3574–75; Kelce 3669–72; Ball 4287–91; J. Weir 4337–39; P. Weir 4785–86; Robinson 4393–96; Colnon 5216–17, 5231–32; Harman 5706–07; Gossard 5891–99).

In the last two decades, few college graduates have even considered coal mining as a career. The coal industry's depressed state in the early 1950's and the attractions of other employment opportunities available for young engineers made it difficult to interest them in the cofal business. As a consequence of the scarcity of young men entering the business during the last 15 or 20 years, there is today a shortage of the qualified technical personnel needed for modern coal mining (Phelps 3463–65; Mullins 3574; Kelce 3669–70; Ball 4288–89; Robinson 4395–96; Gossard 5894–95).

Because of this lack of interest on the part of students, the number of mining schools in the United States has declined (Ball 4289; J. Weir 4338; Robinson 4395). In each year during the last decade, only about 100 college graduates have entered the mining field (exclusive of petroleum), and of these, less than 20 each year have gone into the coal business, while during this same time 40 or 50 technically trained people have retired from the coal business each year (Robinson 4394).

Coal companies are encountering difficulty in filling middle management positions from the ranks of hourly employees because wages of union employees have risen to the point where most of them would rather remain as hourly workers than go into management (Mullins 3574; Kelce 3669; Colnon 5217).

Kerr-McGee has had great difficulty in recruiting miners, in filling technical positions, and in finding coal salesmen. This company spent over two years searching for a general superintendent, found only five or six candidates for the job, and wound up not even entirely satisfied with its ultimate choice. When Kerr-McGee's resident engineer left to go with Consolidation Coal Company, it was unable to obtain a lead for a replacement after a 3-month search (Gossard 5891–93, 5897–99; see RPF 169–170).

Several coal companies in the Midwest are seeking presidents, without any apparent success; and Ayrshire Colleries Corp. has been hurt by a lack of experienced top management personnel (Kelce 4670–71; J. Weir 4386). Active companies generally suffer from a shortage of qualified personnel (Ball 4289–90; Colnon 5216).

According to John R. Harman, Jr., of Booz, Allen & Hamilton, Inc., who spent 3 months at the end of 1965 in an unsuccessful effort to find a coal executive who might be employed by Kennecott (*supra*, pp. 862–65) it was extremely difficult to persuade senior executives in the coal business to accept new positions because they had substantial equity positions in fairly small companies, or were already senior executives of very large or family businesses, or were too old to consider changing positions (Tr. 5706–07).

Thus far, there have been sufficient mining executives and personnel available through recruitment to enable Utah Construction & Mining Co. to accomodate its expanded mining activities (CP F87). However, the testimony cited related only to "mining executives" and "mining activities" and was not addressed specifically to coal mining. Mr. Reeves did not testify that Utah Construction has been able to hire experienced coal mining personnel, and CPF 79 suggests the contrary.

The fact that Consolidation Coal Company, the second largest coal producer, has had its top corporate offices staffed by lawyers (Mullins 3574–75) does not support complaint counsel's broad generalization (CPF 91) that "Coal executives need not have coal mining experience." Obviously, Consolidation has qualified operating personnel but apparently found them lacking in the other skills required of top executive officers. Moreover, the record fails to show that these lawyers lacked business experience in the production and sale of coal

before assuming executive positions. In any event, the experience as company counsel that these men had, provided an opportunity for them to become knowledgeable regarding all corporate activities.

Although it is true, of course, that Kennecott employs geologists and mining engineers (CPF 73), the record fails to demonstrate that their skills and experience are readily adaptable to coal mining. Moreover, the record suggests that complaint counsel have overstated the coal-mining-engineering experience and capabilities of S. D. Michaelson, chief engineer of Kennecott's Western Mining Divisions (compare CPF 80 with RRB-Ex, p. 36a).

The problems that Kennecott would have faced if it had gone into the coal business de novo in 1965 would not have been resolved by the availability of the Knight Ideal mine crew. Moreover, complaint counsel's contentions along this line (CPF 83, 90) ignore Kennecott's decision not to acquire or to continue the Knight Ideal operation and management's refusal to go forward with plans for a new mine.

5. *Availability of Coal Reserves and Water*

In urging that sufficient coal reserves were available in the United States, including the Mountain Region, to have enabled Kennecott to enter the coal industry de novo before or after 1965 (CPF 105), complaint counsel ignore the testimony in the record to the effect that substantial coal reserves capable of economic exploitation under current conditions are almost impossible to obtain in the eastern United States and very difficult to obtain in the western United States (Robinson 4396–97; Mullins 3563–64; Ball 4291–93; J. Weir 4385–87; Christensen 5195). The only citation given in support of CPF 105 does show that during the past 5 years two oil companies have acquired extensive coal reserves, some of which were described as capable of economic exploitation under current conditions and others characterized as "long-range reserves" (Robinson 4450–60). This same consultant had advised Kennecott in writing in September 1965 that "it would be almost impossible for a company, no matter how financed or well managed, to enter the coal industry in 1965 and be able to pick up sufficient reserves to support an annual production of 20 to 30 million tons. The available good reserves even in the Western states are just about tied down". (RX 185–A.) Accordingly, his suggestion was that Kennecott acquire or merge with a major coal company or several smaller companies (RX 185–A; Robinson 4415–17).

The proposed findings of complaint counsel that supposedly "demonstrate that sufficient coal and water were and are available in

Utah and in the Mountain states to permit entry into the coal business" (CPF 108–122), are subject to limitations that detract materially from the validity of such a generalization. Although it is true that the record shows that in 1968 there were 38 million acres of coal lands available for lease from the United States Government, including almost 27 million acres in the Mountain States, there is capable of commercial exploitation under present or foreseeable economic conditions. Similarly, the evidence cited to support CPF 110 (a)–(o) is subject to so many qualifications as to engender considerable doubt that substantial coal reserves capable of economic exploitation under present conditions have been readily available throughout the United States within the past 5 years. (See CPF 110 (a)–(o), and respondent's exceptions thereto, RRB–Ex, pp. 43a–46a.)

In suggesting that requisite amounts of water are available in the Mountain region (CPF 112–122), complaint counsel take a position inconsistent with their argument (CPF–Br, p. 20) concerning the "comparative scarcity of water" to supply nuclear-powered generating plants. Complaint counsel and respondent are in agreement—and the record shows—that water is comparatively scarce in those parts of the West that have coal reserves. Respondent's position is not that water is so unavailable in the West as to preclude the expansion of coal production there but that water is an important element in putting together a long-term coal supply contract so that the absence of water in a particular area is a severe handicap to the exploitation of coal reserves in such an area. The record bears out the validity of this position.

There is no evidence for the extent to which the quantities of water referred to in CPF 112 and CPF 114–117 are available for use in connection with electric generating plants or of the extent to which these quantities of water are available at points suitable to the location of power plants (see RPF 145, RPF 399–402, RPF 509).

6. *Prospects for a Kennecott Coal Operation Based on the Knight-Ideal Reserves*

In the course of hearing, respondent was able to demonstrate by substantial evidence that certain assumptions in the Robinson & Robinson report regarding equipment and transportation were not well-founded (RPF 314–315) and, more important, that the prospects for expansion from Knight-Ideal into the commercial coal business on any significant scale were dubious (RPF 371–513).

This evidence has been considered from two different standpoints.

On the one hand, it has no relevance to the intent of Kennecott's management and directors as of June 1965 and thereafter because there was no showing that either management or the directors knew of these negative considerations. Their intent must accordingly be judged on the basis of the information available to them—namely, the Robinson & Robinson report (CX 59 A–Z–40) and WMD's Preliminary Economic Evaluation (CX 61 A–Z–18) and related documents—all of which were sanguine about a captive coal operation and a commercial operation based on the captive operation.

On the other hand, such a showing does have relevance in negating, on the basis of objective facts, complaint counsel's assumption that if Kennecott had mined the Knight Ideal reserves, it would have expanded from this base to become a significant regional or national coal producer and marketer.

In detailed proposed findings keyed to the record (RPF 371–513), respondent has shown that Carbon County, Utah—in whose Book Cliffs coal field Knight Ideal is located—was an unlikely place for a company to choose as a base for entry into the coal business on a substantial scale. Every witness knowledgeable about coal, those called by counsel supporting the complaint as well as those called by respondent, who testified on the subject was emphatic that the combination of factors that characterizes the coal business in Carbon County could hardly be made less attractive (Turner 916–17, 929–31; J. Weir 4344; Reeves 1275–79, 1326–32; Heiner 2634–44; Peperakis 2830; Phelps 3352–56; Kelce 3699–3702; Macke 3782–84, 3811–12; Ball 4295–97; Christensen 5189–91; Gossard 5914–20; Robinson 4392–93, 4408, 4415).

a. *Declining Demand, Declining Production*

The demand for coal produced in the Carbon County and Emery County areas has been declining, and total Utah coal production amounted to 4.1 million tons in 1968,[53] the lowest in 20 years, nearly half of it accounted for by two captive coking coal mines (RX 100; Nelson 2161–62).

The decline in Utah coal production has been due primarily to lack of markets and high costs of production (Nelson 2162–63; Heiner 2640; Mullins 3625). While demand for electricity in Utah has continued upward at about the national level, the electricity

[53] Carbon and Emery Counties accounted for 4 million tons, almost 98 percent of total Utah production. Carbon County produced approximately 72 percent, and Emery County produced 25 percent. (Nelson 2169–70; Hachman 3117–20.)

supplying this demand in Utah is being generated by other fuels and by coal from outside the state; namely, from the low-cost strip mine at Kemmerer, Wyoming (Nelson 2163). The Kemmerer mine is physically closer to the major coal consuming areas in Utah than are the Utah coal producing areas, and the coal produced from that mine is substantially cheaper than Utah coal (Nelson 2163–66; RX 18).

The number of producing coal mines in Utah has dwindled from 20 in 1968, the lowest number since 1910. Many of the mines were small and poorly operated,[54] and coal has lost to natural gas the market for heating fuel. (Nelson 167–70; CX 63 E–F.)

b. *Mining Conditions*

In the Book Cliffs field where the Knight-Ideal reserves are located, the coal seams are characterized by faults, wants, rolls, and gas; there is a substantial dip or pitch in most coal seams; and the coal is covered with a thick, heavy overburden. Coal seams in the Knight-Ideal area are also lenticular—that is, they thin and thicken—and close together, and are high in sulphur. These conditions result in high mining costs. (RX 146–C, E; Macke 3741–45, 3780, 3785–86; Heiner 2326–35, 2605, 2609–10, 2620–22; Phelps 3354, 3358–59, 3430; Turner 926–28; Gossard 5917–18; Ball 4302; CX 59–B, N–O; Peperakis 2793–2802, 2810–11; Mullins 3624–25; see also RPF 394.)

All of the coal produced in Utah is mined underground with the result that mining costs are substantially higher than costs in surrounding states where coal is strip mined (Heiner 2625–28; Lee 1587–88; Hachman 3111; Nelson 2171–73, 2273; O'Brien 5307–08; J. Weir 4345; Mullins 3624–25; McMillan 1049, 1091, 1157). The largest existing or projected mines in the West—that is, over one million tons a year—are strip mines with low ratios (minimal overburden), and underground mines cannot compete with such mines (Kelce 3703–04; Macke 3814; Phelps 3425–26). For example, coal mined by Utah Construction & Mining Co. in the Four Corners area of New Mexiso, costs 14.5 cents per million BTU delivered to the Arizona Public Service Company utility plant, while the cost of coal delivered by North American Coal Co to Utah Power & Light Company's Castle Gate plant is 18.5 cents per million BTU (Heiner 2627).

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[54] Since 1953 the average coal production per man day in Utah has been below the national average (Nelson 2171).

c. *Limited Water Resources*

Water, largely for cooling purposes, is vitally important in determining the location of steam-generated utility plants (Hachman 3121; ;O'Brien 5287, 5295–96; Hunter 2953; Nelson 2211; Ball 4294; Christensen 5186). The coal fields that will be developed in the West in the foreseeable future will be those located near an adequate supply of water (Turner 913–14; Ball 4293–94; Bishop 707–08; see Nelson 2210–12; O'Brien 5287).

The West in general has a limited supply of water, and Utah, in particular, has an inadequate water supply for use in developing mine-mouth utility plants (Hachman 3121; Ball 4294; Hunter 2953; Bishop 673–74; Miller 3875). Water in Utah is extensively used for agriculture, but there is only a limited supply for steam generation of electricity; and, in general, agricultural users are preferred over industrial users by government agencies (Hachman 3121–22).

Adequate water for construction of a mine-mouth utility plant is not readily available at reasonable cost in Carbon County (Bishop 709–10, 749; Turner 916–17; Nelson 2215–16; Hachman 3121–22; Macke 3811–12; see RPF 402).

d. *Transportation Problems*

Transportation problems pose another complicating factor for a substantial coal operation in Carbon County. These include lack of direct access from mine to rail transportation (requiring intermediate use of truck transportation), the steep grades encountered (making unit trains economically impracticable), the lack of direct rail connections for shipments to the south and southeast (Arizona and New Mexico), and the great distances that Carbon County coal must move over different railroads to reach major population centers in the West, resulting in a cost disadvantage in comparison to Wyoming and Montana coal. (RPF 403–409.)

e. *Conditions at Knight Ideal*

The Knight-Ideal property itself not only suffers from the generally poor conditions in Carbon County, but has additional disadvantages of its own. It is approximately 18 miles by road from the nearest railroad, and located in an isolated canyon with a dirt access road running 11 miles from the highway (CX 59–B, CX 61–R; RX 14–F). As the examiner and counsel know from personal observation, the access road is difficult of passage during severe winter weather conditions (see Ensign 4837–39). Under the most

optimistic view of mining conditions, the property contains only 34 million tons of recoverable reserves (CX 59–B), and may have as little as 9 million tons of recoverable reserves (Phelps 3380). In any event, its reserves are insufficient to support a substantial utility supply contract (Heiner 2667; Sporn 4574–75).

f. *Markets for Utah Coal*

Regarding existing and future markets for Utah coal, respondent has presented a detailed analysis (RPF 410–476) that, although perhaps overly pessimistic, is in substantial accord with the evidentiary record.

Without further extending this initial decision by detailing the markets, actual and potential, for Utah steam coal both within and without the State, it is fair to state that, with few exceptions, the market outlook for Kennecott as a new Utah-based coal producer would not have been bright. It is true that the reports on which Kennecott's management and directors based their decision to acquire Knight-Ideal painted a different picture. However, it must be assumed that before embarking on a de novo entry into coal, Kennecott would have made an in-depth study that would have disclosed the adverse factors it would have faced if it had gone into coal as a major diversification venture with Knight-Ideal as a base.

Complaint counsel take a contrary view. They contend that "The future of coal production in Utah is bright." (CPF 182–183, 118, 124–128.) But not only is the evidentiary support for this prediction tenuous,[55] except possibly on a long-range basis, but the inference that the near-term outlook for a Utah-based Kennecott coal operation could be so characterized is even more tenuous.

Although, as noted by complaint counsel, the plans of Utah Power & Light Company for expansion of its generating capacity will ultimately require 3 million tons of coal a year, there is no assurance that Utah coal will supply this demand. As far as the near future is concerned, Utah Power & Light plans to construct a new generating unit somewhere on its system to go on stream in 1974, and this unit will require approximately 1 million tons of coal annually. References to new generating capacity requiring some 3 million tons of coal annually include projected expansions in the following

[55] Complaint counsel have insisted that Utah possesses the "greatest reserves of thick, high quality coals remaining in the United States" (CPF 177, CRB, p. 34), but neither of their record citations supports the claim, and the evidence is wholly to the contrary (RX 172–A–B, *supra*, p. 788; RPF 387–398; see also RPF 371–386).

decade. The site for the new plant had not been selected at the time of hearing. Sites in Carbon and Emery Counties were among the 8 possible locations, which also included Wyoming and Idaho, but there was no indication that the Utah sites were more favorably viewed than the other sites. (RPF 441–444; compare CPF 117–118, 125, 182;[56] RRB–Ex, pp. 46a–47a.)

Utah Power & Light had already held discussions with Consolidation Coal Company, with Peabody Coal Company, and with United States Fuel Co., each of which had coal reserves in Carbon County or Emery County, with respect to supplying coal to the proposed new plant (CPF 184–185; RPF 443).

Although the demand for coal for utility use in the Southwest (southern California, Arizona, and New Mexico) is expected to grow dramatically in the decades ahead, the prospects for the use of Utah coal, except possibly southern Utah coal, do not appear bright. Moreover, the coal supply arrangements already made or projected, as well as the difficulties of finding adequate coal reserves in Utah or elsewhere in proximity to an adequate water supply, would pose real problems for a de novo entrant. (RPF 462–476; compare CPF 124–126, 183; RRB–Ex, pp. 47a–48a; see Netschert 4267–68.)

As for the demand for coal that may be created by the new generating units planned in the Four Corners area of New Mexico and at the Navajo power plant at the Glen Canyon Dam site on Lake Powell near Page, Arizona, by the WEST group, a consortium of southwest utilities, it must be noted that this represents a projection of possibilities rather than a firm schedule. The record also indicates that the demand for coal by the WEST group—possibly aggregating 105 million tons, annually by 1980—will be met by New Mexico and Arizona coal. If any Utah coal is used it will probably be coal from southern Utah. (CPF 124; RPF 472–475; RRB–Ex, pp. 47a–48a.)

The prospects for the use of Utah coal for gasification or for liquefaction (CPF 127, 183) are speculative (RRB–Ex, p. 48a; see *supra*, pp. 803–04).

g. *Competitive Coal Company Activities*

Both sides cite the Utah activities of several coal companies in support of their opposing contentions regarding the prospects for Utah coal developments. In the period from 1963 to June 1969, when this record was closed, a number of leading coal companies

[56] The power company is erroneously designated "Utah Construction" in CPF 182.

with a great deal of experience in coal mining examined coal properties in Carbon and Emery Counties. Some of them acquired coal properties there, but not one opened a coal mine on these lands. These companies included Peabody, Kerr-McGee Corporation, Utah Construction & Mining Co., North American Coal Corp., and Island Creek Coal Company (a subsidiary of Occidental Petroleum Corporation). (CPF 184–185, CRB, p. 46; RPF 477–496.)

Because Peabody already had a contract to supply substantial quantities of coal to Nevada Power Company, it had been exploring the possibility of opening a mine in Emery County to fulfill that contract and to meet such other demands as it might be able to generate. (CPF 184; RPF 478–485; *supra*, pp. 855–58.)

Island Creek Coal Company acquired reserves contiguous to the Knight-Ideal property, but not only did it fail to open a mine there, it also closed down a mine that was operating in the same general area (RPF 491–492; *supra*, p. 857).

In 1967, North American Coal Corp., acquired the coal mines and reserves of Independent Coal & Coke Company [57] in Carbon County, as well as other coal reserves in the general area, but at the time of hearing, these operations had not been expanded (RPF 493).

Both Kerr-McGee Corporation and Utah Construction & Mining Co. investigated mining properties in Carbon and Emery Counties but determined to take no action because of difficult mining conditions and unfavorable market prospects (RPF 486–490).

Other coal companies have acquired coal reserves in central Utah, but at the time of hearing, none of these reserves had been developed. Consolidation Coal Co. (now part of Continental Oil Co.) and Kemmerer Coal Co. have coal reserves in lower Emery County and Sevier County, and Consolidation also has extensive reserves in the Kaiparowits field in southern Utah, which have not been developed. (RPF 496.)

On balance, it appears that generally the coal companies listed were interested in Utah coal for a long-range operation and for such interim markets as might develop, including the potential needs of Utah Power & Light. However, the record fails to indicate that their assessment of Utah coal prospects was materially different from that now contended for by respondent.

It may be noted also that in the last 10 years, a number of small independent coal mines in Carbon County have closed. Even though

[57] Independent was the coal supplier to Utah Power & Light's Castle Gate plant.

substantial coal reserves were present, these mines closed because of difficult mining conditions and a lack of markets. Only one new mine has been opened in the area; this was on a property where another company had operated on a lower seam, but the outlook for its success appeared to be dubious (RPF 494–495).

h. *No Kennecott Coal Operation*

In any event, whatever ideas Kennecott's Western Mining Divisions may have had in 1965 regarding the sale of Knight-Ideal coal to customers of all types both within and outside Utah, the fact remains that Kennecott acquired only the Knight-Ideal reserves, closed down the existing mine, decided not to produce coal for its own fuel needs, and accordingly did nothing toward developing a new Knight-Ideal mine. When the captive base load projected for Knight-Ideal disappeared, so did the commercial coal operation predicated upon it.

Thus, aside from the fact that Kennecott acquired the Knight-Ideal coal reserves, it had no "original venture into coal" and no "Utah-based coal operation" from which to engage in a "natural" and "logical" expansion into other states in the Mountain Region. (Compare CPF–Br, pp. 56, 107–08.) Kennecott's Western Mining Divisions saw the "logic" in such a progression (*supra*, pp. 818, 826–29), but the actions taken by Kennecott's management (*supra*, pp. 838–48) did not reflect their recognition of such logic. And, as noted *supra*, the "logic" was based on doubtful premises (see, for example, Kelce 3700–02).

VII. Probable Effects on Competition

It is significant that complaint counsel have proposed no findings of fact, as such regarding the probability of a substantial lessening of competition. Instead, they have dealt with the subject in their brief (CPF–Br, pp. 118–21) and in their reply brief (CRB, pp. 17–28), relying on a per se theory, on inference, and on legal argument. In the preamble to their proposed findings on the areas of the country to be considered (CPF 176–197, pp. 101–09), they simply propose an undocumented finding that "Competition has been substantially lessened in the following areas of the country: Utah, the Rocky Mountain States, and the nation as a whole." Elsewhere (CPF–Br, pp. 108–09), they add the area west of the Mississippi.

A. THE QUESTION OF RELEVANT GEOGRAPHIC MARKETS

Before considering the probable effects on competition resulting from the elimination of Kennecott as a potential competitor in coal, it is necessary to determine whether these are appropriate sections of the country for measuring these effects. However, the determination of the relevant geographic market or markets poses difficulties in this case for several reasons.

First, because this case involves only potential competition and because Kennecott's consideration of coal was so general,[58] there was no specific geographic focus except for that supplied by Kennecott's acquisition of the Knight-Ideal coal reserves in Utah.

Second, relying on a literal reading of the case of *United States* v. *Pabst Brewing Co.*, 384 U.S. 546, 549–50 (1966), as having eliminated any necessity for proof of an economically meaningful geographic market,[59] complaint counsel failed to offer any expert economic analysis or other evidence to establish the validity of the nation and various regions of the nation as relevant geographic markets in which to test the competitive effects alleged to have resulted from the challenged acquisition. Instead, complaint counsel simply rely on their own analysis as advocates in support of the complaint.

Third, respondent presented expert economic testimony to the effect that none of the four areas listed by complaint counsel—Utah, the Mountain Region, the area west of the Mississippi River, and the United States—is a meaningful geographic market with

[58] In their consideration of coal and the purchase of the Knight Ideal reserves, Kennecott's management referred to national and international markets, the West, the intermountain area, the Northwest, and the west coast, as well as to Utah, Wyoming, New Mexico, and Colorado (supra, pp. 817, 818 844–45). The record affords no exact definition of the "intermountain area," as the term is used in Kennecott's documents. As Mr. Kinnear used the term, it included Utah, Nevada, Idaho, and possibly Wyoming and Montana (Tr. 2073).

[59] The examiner doubts that *Pabst* has the breadth that complaint counsel apparently ascribe to it, and it is distinguishable on its facts from the instant case since in *Pabst* there was actual competition between the acquiring company and the acquired company in each of the geographic areas considered. In any event, the *Pabst* case, read in the context of prior decisions, simply relegates proof of a relevant geographic market to a "subsidiary" position rather than as the corpus delicti; it does not dispense with the need for a rational basis for the selection of the geographic area or areas for testing a merger. (384 U.S., at 549–50.) The section of the country need not be delineated by "metes and bounds," and there is no need for "an army of expert witnesses" on the subject (*id.* at 549), but, according to *United States* v. *Continental Can Co.*, 378 U.S. 441, 458 (1964), cited in the *Pabst* opinion, the merger must still be "viewed functionally in the context of the particular market involved, its structure, history and probable future." It is only when a merger is "inherently suspect" that such "elaborate proof" may be dispensed with.

respect to competition in the production and sale of coal or of competing fuels generally.[60]

Irrespective of the proper interpretation of the *Pabst* case, the deficiency in complaint counsel's case is that their contentions both as to competitive effects and as to the areas in which to measure them are based on a hypothesis that lacks the essential factual predicate. Their case is built on the foundation of a Knight-Ideal coal operation—an operation that never came into being. Nevertheless, complaint counsel treat Knight-Ideal as an operating entity; hence, they seek to focus on the geographic area in which Knight Ideal is located and where the structural statistics (CX 181, CX 182) tend to show a higher degree of concentration than the national statistics (CX 183; RX 170; see *supra*, pp. 793–94).

When Knight-Ideal is put in its proper perspective, however, there is eliminated the primary basis for focusing on any circumscribed area, such as Utah, the Mountain Region, or the area west of the Mississippi, as the section of the country in which to measure the competitive impact of Kennecott's removal as a potential competitor in coal.

In any event, and taking the *Pabst* decision into account, the examiner finds that complaint counsel have failed to carry their burden of proof in establishing that any of the geographic markets contended for are relevant areas of effective competition. (Compare the *Procter & Gamble* case, 63 F.T.C. 1465, 1561, fn. 39 (1963).)

Although Federal Trade Commission economist James M. Folsom prepared tabulations (CXs 181–183) that showed concentration ratios in coal production in the three geographic markets alleged in the complaint (Utah, the Mountain Region, and the United States), he offered no opinion that these were, in fact, relevant geographic markets. He acknowledged that he lacked the sort of information that he believed to be necessary in order to determine a relevant market for economic purposes and that he had made no studies to determine the relevant geographic market or markets (Tr. 758–67, 773–74, 798–99, 817–25). From a reading of his entire testi-

[60] The complaint delineated the areas in which the alleged anticompetitive effects may be measured as "Utah, the Mountain Region, and the United States and relevant portions thereof" (Complaint, par. 30). At an informal prehearing conference on September 12, 1968, complaint counsel stated that the alleged geographic markets intended to be referred to in paragraph 30 of the complaint were limited to Utah, the Mountain Region, and the United States. In their proposed findings, however, complaint counsel have included the West (the area west of the Mississippi River), presumably as one of the "relevant portions" of the United States referred to in paragraph 3 of the complaint. Respondent noted this limitation in its brief (RB 4, fn. 2), but did not otherwise complain about the inclusion of the West except to argue that it is not a relevant geographic market.

mony, it appears that the exhibits prepared by the Commission economist represented a response to the instructions of complaint counsel to provide statistical data in support of the allegations of the complaint rather than an attempt to provide expert economic analysis (Tr. 625, 627–34, 790–92, 798–802, 819–21).

We are thus faced with the anomaly of lacking a relevant geographic market in which to assess the competitive impact of the acquisition. Accordingly, in deference to the *Pabst* case and in recognition of the possibility that the Commission may take a different view regarding the appropriate market areas, this subsection will not only examine the validity of the market areas contended for by complaint counsel but will also briefly consider such evidence as there may be regarding the state of competition in each of such areas.

Before doing this, however, it may be useful to include a few preliminary observations regarding the nature of geographic markets for coal.

The area within which coal may be marketed depends upon a variety of factors, including the availability of suitable transportation, the size of the coal reserve, the quality (especially the BTU content) of the coal, the location of water reserves, and, in recent years, the problem of air pollution. In general, transportation costs permit shipment of coal for only relatively short distances; hence, coal marketing tends to be limited to the geographic area of its production, including neighboring states (Netschert 3981–83; Fox 6081–84; CPF 190.) However, there are variations and exceptions that test this general rule, such as the 850-mile shipment of coal from Colstrip, Montana, for use at Cohasset, Minnesota (*supra*, p. 779; see pp. 777–78). Extra high voltage transmission lines have also introduced a new dimension in coal marketing (*supra*, pp. 777–78; CPF 191; Fox 6100–01). For this reason it is necessary to analyze each market situation in the light of the variable transportation and other factors that influence the geographic reach of any particular producer.

It is against this background that we consider Utah, the Mountain Region, the area west of the Mississippi River, and the nation as a whole.

B. UTAH

Despite complaint counsel's emphasis on Utah as a significant relevant market for coal, the fact that State boundaries lack economic significance in the coal industry was testified to not only by respondent's economic witnesses but by Mr. Folsom, the Com-

mission's economist. Mr. Folsom made no study to determine whether Utah is a relevant market for coal (Tr. 824–25), and he knew of no factors, except possibly contracts for water supplies,[61] that would make state boundaries relevant boundaries for measuring a relevant geographic market for coal (Tr. 765).

Mr. Folsom's conclusion regarding the irrelevance of state boundaries was in accord with the testimony of Dr. Bruce Netschert and Dr. Bertrand Fox,[62] respondent's economic experts (Netschert 4094; Fox 6102–05; see *supra*, pp. 768–69).

In arguing for the "importance of the Utah coal industry," complaint counsel referred to the state as the second largest coal producer in the 8-State Mountain Region (CPF 176). The fact is that in 1967 Utah mined less than one percent (0.76%) of the coal produced in the United States (RX 172–A, *supra*, p. 788). Utah's annual coal production of about 4 million tons was equivalent to total lignite production, which complaint counsel dismissed as not "significant in the competitive picture" (CPF Br, p. 9). With the statistics limited to steam coal, Utah's production in 1967 was 2.3 million tons annually (RX 100), or about half as great as the production of lignite. The production of steam coal in Utah in 1967 was the 4th largest of the 8 States in the Mountain Region—two of which, Idaho and Nevada, have no production (RRB–Ex, p. 77a).

Moreover, the markets shown for Utah coal in CPF 176, as well as in other proposed findings, suggest the inappropriateness of Utah as a relevant geographic market. According to RX 179, 1.7 million tons of Utah coal are consumed within the state and 2.3 million tons are shipped to other states. The exhibit also shows that Colorado ships 1 million tons of coal into Utah. Utah's coal consumption is less than 1 percent of the national total (Folsom 800).

The record supports a finding that there is competition among Utah coal producers, but CPF 178 is misleading in its suggestion that there is competition among all coal producers in all parts of Utah and that competition among Utah coal producers may be differentiated from competition between Utah coal producers and coal producers elsewhere. (Compare CPF 193 (b), (d), CPF 195–196; see Fox 6102–06, 6263–64.)

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[61] There is no substantial evidence (if any) regarding water contracts in this context.

[62] The examiner rejects as unfounded complaint counsel's *ad hominem* attack on Dr. Fox (CPF–Br, pp. 21–24, 28, 115; see RRB–Ex, p. 20a; Tr. 6184–86, 6291–94, 6430–31; RX 234 A–C, RX 235).

As for coal reserves, Utah's reserves as of 1967 totaled 16.1 billion tons, or slightly more than 2 percent of total United States reserves (RX 172–A, *supra*, p. 788).

Although the coal concentration ratio for Utah (CX 181) was not cited in complaint counsel's proposed findings, their reply brief dealt with this exhibit, as well as with additional figures derived from RX 175–F. The statistical breakdown for 1966 is to the effect that the top 4 coal producers in Utah, including captive coking coal producers, accounted for 75.4 percent of the state's output and two firms accounted for 54.1 percent of the noncaptive, or steam coal, production. Utah's captive coking coal production in 1966 accounted for 46 percent of total coal production. (CX 181; Folsom 801, 804.)

On the basis of RX 175–F, complaint counsel calculated that captive coal production in Utah amounted to 1,687,193 tons, or 40 percent of total Utah coal production and that in steam coal production the 2 largest producers accounted for slightly over 50 percent and the 4 largest for nearly 72 percent (CRB, p. 19). Complaint counsel did not identify the year, but RX 175–F deals with 1967 figures, with some exceptions, including those for the 4th-ranking producer. The figures may be accepted as approximations, even though they are inconsistent with the 1967 production totals for Utah coking coal and steam coal shown by RX 100.

In presenting CX 181 as a coal concentration ratio for Utah,[63] Mr. Folsom acknowledged that he had not determined Utah to be a relevant geographic market (*supra*) but simply stated that to the extent that it was, concentration of production was "quite high" (Tr. 631).

C. THE MOUNTAIN REGION

The Mountain Region was selected for a statistical breakdown (CX 182) not only to support an allegation in the complaint but also because both the Bureau of Mines and the National Coal Association publish coal statistics for this area.[64] Moreover, there is a belt of bituminous coal running from Montana down through the Mountain Region, except that Nevada and Idaho have virtually no bituminous

[63] The economic relevance of a concentration ratio involving such a high degree of captive production as exists in Utah is open to some question (Folsom 804–05), and the deconcentration that Kennecott might have brought to the Utah market is not too clear (Folsom 635–38).

[64] The Mountain Region is also one of 9 Census Regions for the collection of other statistical data (*supra*, p. 789), but it is a geographic breakdown that lacks market significance (Netschert 3943). There is a regional association designated the Rocky Mountain Coal Mining Institute (McMillan 942, 1019; Peperakis 2789), but its nature and geographic scope were not delineated.

coal deposits, and although Arizona has no coal production, it has very substantial bituminous coal deposits. (Folsom 623–25, 632, 819–20.) On the basis of a "very superficial attempt" to determine the relevant market as far as the Mountain Region was concerned, Mr. Folsom concluded that it afforded a "reasonable" market definition (Tr. 799–800, 819–20, 822).

Although the Mountain Region is self-sufficient in coal, with no imports from outside the region and with coal shipments both within the region and to markets outside it (Netschert 4207), the record supports the opinions of Dr. Fox and Dr. Netschert that the Mountain Region is not a "unified market" for coal—that is, a market in which production from any place within such market area may be sold in any other place within it (Netschert 4094–97; Fox 6088–89, 6282–83; RX 179). They drew the same conclusion as to the West, comprising the Mountain Region and the Pacific Region. The Mountain Region appears to be the likely source for supplying future coal demand in the West (CPF–Br, p. 106, 108, par. (f); RRB–Ex, p. 81a, par. (f)), but the entire Mountain Region is not, as contended in CPF 196, an "area from which coal can be obtained to suit any market." The competition among coal producers in the Mountain Region is not coextensive with the Mountain Region. The shipment patterns shown by RX 179 are consistent with a variety of markets both within and without the Mountain Region, with coal producers facing varying limitations on the markets they can serve. Thus, the Mountain Region does not delineate a relevant area of effective competition. (Fox 6084–6105.)

In any event, in presenting CX 182, which shows that in 1966 the top 4 companies in the Mountain Region accounted for 40 percent of production, and the top 7, for 56 percent, Mr. Folsom stated:

> I would not call this a highly concentrated industry. I would call it no more than a moderate concentration. (Tr. 632.)

In the light of this analysis by Mr. Folsom, apparently as an afterthought, and inconsistently with their espousal of the Mountain Region as a geographic market, complaint counsel, in their reply brief (CRB, pp. 19–20), undertook to establish Montana, New Mexico, Wyoming, and Colorado as "tight oligopolies."[65]

Aside from the fact that state lines are irrelevant in coal competition (*supra*), there is even less basis to isolate these individual States than there is to single out Utah. Even if we were to accord full evi-

[65] The basis for this was an exhibit to whose admission in evidence counsel objected (RX 175 A–H; Tr. 6038), which showed coal production to be concentrated in the hands of relatively few producers in each of the listed states.

dentiary value to CX 67 A–K (*supra*, pp. 844–45, 847–48), this document focused on central Utah as of primary interest to Kennecott after ruling out Wyoming, Colorado, and New Mexico, and without even mentioning Montana in that regard (CX 67 C–D). Thus, complaint counsel's identification of Kennecott as a "potential competitor" in each of those states is wholly without record support.

D. THE AREA WEST OF THE MISSISSIPPI RIVER

Regarding the area west of the Mississippi River (CX 179), Mr. Folsom testified that there was no "economic basis" for using the Mississippi as a dividing line between coal-producing states. From an economic viewpoint, he said, "there is not that much sense to it." Commission Exhibit 179 was prepared because of Kennecott's "interest in coal mining west of the Mississippi River." (Tr. 625; see Netschert 3978, 4266–67.) Neither this exhibit nor any proposed finding establishes this western area as a relevant geographic market, and the competitive impact of the acquisition is not demonstrated therein. Moreover, to the extent that Kennecott's interest in coal may have related to the "West," rather than to the country as a whole, the evidence is persuasive that the competitive conditions, in terms of structure, presence of numerous potential entrants, and competition from other fuels, parallel those obtained on a national scale.

E. THE NATION

That leaves the Nation. However, on the basis of the evidentiary record, including the uncontradicted testimony of two economic experts, it is impossible to consider that there is a national market for coal within which all producers are competing with one another. (RX 156, RX 157; Netschert 3983–84, 4207–08; Fox 6083–84, 6262–63.)

The "concentration" aspect of the coal industry nationally has been considered *supra* at pages 791–95. As there noted, Mr. Folsom testified that the level of concentration in the coal industry was "relatively low" (Tr. 758).

F. CONCLUSORY FINDING

Complaint counsel have failed to establish that any of the geographic areas specified in the complaint are relevant areas of effective competition in which to measure the competitive impact of Kennecott's acquisition of Peabody.[66] In view of the patterns of competition,

[66] Compare the location of Peabody's coal mines, its principal markets, and its coal reserves, as shown *supra*, pages 756–58.

the coal shipment patterns, the transportation barriers, and the other commercial facts shown by the record, the contours of the sections of the country cited by complaint counsel do not conform to competitive realities.

Assuming *arguendo* that one or more such areas may be a relevant market for purposes of this case, the examiner finds a failure of proof that the effect of the acquisition may be to substantially lessen competition in any such area.

Because of the limited scope of the geographic evidence in this case and because Kennecott's general interest in coal as a possible avenue of diversification lacked particular geographic focus,[67] it is neither necessary nor possible on this record to analyze the structure of the coal industry in specific geographic terms other than those that have just been considered. However, it is possible to analyze such structure geographically in the general national terms set forth in these findings, despite the fact that the United States as a whole is not a relevant market. This approach finds sanction in the *Procter & Gamble Co.* case, 63 F.T.C. 1465 (1963), *rev'd* 358 F. 2d 74 (6th Cir. 1966), *rev'd* 386 U.S. 568 (1967), where the Commission said:

> Despite the fact that the proper sections of the country . . . are a series of distinct regional markets, no attempt has been made to demarcate these markets, and it is probably not a feasible undertaking. In such circumstances, it is appropriate to use aggregate national figures as approximations of conditions obtained in the several regional markets. (63 F.T.C., at 1561; footnote omitted.)

The national industry picture is one of a competitive structure, intensive interfuel competition, and numerous potential entrants; and to the extent that the evidence deals with more specific geographical areas, the picture is essentially the same as the national picture.

The subject of relevant geographic markets and the competitive effects of Kennecott's acquisition of Peabody will be considered further in the summary and analysis that follow.

SUMMARY AND ANALYSIS

I. Introduction

Before setting forth the conclusions of law required by Rule 3.51(b), a brief summary and analysis of the facts and the law will serve to satisfy the Rule's further requirement that the initial decision shall include a statement of the reasons for those conclusions.

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[67] See footnote 58, *supra*, p. 885.

A. NATURE OF THE ACQUISITION

Before its acquisition of the Peabody Coal Company in March 1968, the Kennecott Copper Corporation was primarily a copper producer, with lesser interests in certain associated metal-mining and other related activities. Kennecott was not engaged in the production or sale of coal. Peabody's business was confined to the production and sale of coal. Thus, Kennecott and Peabody were not competitors, and neither was a significant customer or potential customer of the other.

The acquisition, accordingly, had neither a "horizontal" aspect nor a "vertical" aspect, and neither is charged in the complaint.[68] Nor does the acquisition involve any aspect of product extension or market extension, or any economies or efficiencies of advertising, purchasing, or marketing. There is no calm of reciprocity except as this may be implied in subparagraph 30(f) of the complaint (*infra*).

Moreover, this was not an acquisition by a so-called "conglomerate" corporation. It represented an effort by Kennecott—engaged in a cyclical business with limited opportunity for expansion—to invest its accumulated and growing cash reserve in a new business and thereby to realize a long-recognized need to diversify. Kennecott purchased the Peabody business and assets for cash without issuing any additional equity or debt securities.

At the time of the acquisition, the business and substantially all of the assets of Peabody were transferred to a new Kennecott subsidiary (also named Peabody Coal Company). Since that time, this separate corporation has continued, under the active management of the officers who had previously managed "old" Peabody, to compete in all the areas of the United States where it had competed before the acquisition (Lee 1519–20).

B. THE PLEADINGS

Paragraph 30 of the complaint charges that the Peabody acquisition violated Section 7 of the Clayton Act by reason of the following alleged anticompetitive effects:

(a) The acquisition of Peabody by Kennecott has eliminated a substantial competitive factor in the coal business in Utah, the Mountain Region, and the United States and relevant portions thereof;[69]

(b) Kennecott has been permanently eliminated as a substantial potential entrant into the production and sale of coal in Utah, the Mountain Region, and the United States and relevant portions thereof;

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[68] But see CPF–Br, p. 111.

[69] See footnote 60, *supra*, p. 886.

(c) Kennecott has been permanently eliminated as a substantial potential entrant into the production and sale of coal to electric utility companies in Utah, the Mountain Region, and the United States and relevant portions thereof;

(d) Kennecott has been permanently eliminated as a substantial potential competitor having an actual and potential influence upon competition in the coal industry in Utah, the Mountain Region, and the United States and relevant portions thereof;

(e) Concentration may be substantially increased, and the possibility of future deconcentration has been substantially reduced, in the production and sale of coal in Utah, the Mountain Region, and the United States and relevant portions thereof;

(f) The substitution of Kennecott, with its vast resources as the leading company in the copper industry and its existing relationships with utility companies, tends unduly to increase barriers to the entry of new competition, and to deprive smaller coal companies of an equal opportunity to compete in the sa elof coal in Utah, the Mountain Region, and the United States and relevant portions thereof; and,

(g) Users of coal have been, or may be, denied the benefits of free and open competition in the sale of coal in Utah, the Mountain Region, and the United States and relevant portions thereof.

In its answer (Par. 30), respondent denied each of the foregoing allegations and averred, among other things, that "its acquisition of Peabody has had, and is calculated to have, no economic effect other than to afford Kennecott, as a copper producer, needed investment risk diversification and a needed opportunity for expansion."

To support its claim that Kennecott was a significant likely entrant into or a potential competitor in the coal business, the complaint (pars. 9–11) relies upon Kennecott's consideration of diversification into coal and particularly its activities attendant upon its investigation and purchase of the Knight-Ideal coal reserves in Carbon County, Utah. In the corresponding paragraphs of its answer, Kennecott averred that the investigation and purchase of the Knight Ideal reserves were for the purpose of a hedge against possible higher natural gas prices at its Utah Copper Division; that such consideration as it gave to diversifying into coal, before its active consideration of the acquisition of Peabody, was part of its program of investigating the possibilities of business diversification into a number of industries; and that it had no special capability or incentive to enter the coal business other than by the acquisition of a substantial coal company.

Respondent contended in Paragraph 30 of its answer "that it was never a potential competitor in or likely entrant into the production and sale of coal, for the generation of electricity or otherwise, in Utah, the Mountain Region or the United States, that several companies in the coal business are larger than it, that there have been

capable and substantial new entrants into the coal business and that there are many potential competitors which have special capabilities and incentives to enter." Respondent further contended that coal has been subject to competition from oil, natural gas, hydropower, and increasingly, from nuclear energy, and that the latter is expected to be coal's principal competitor as a fuel for its most significant customer, the electric utility industry.

The pleadings also raise questions as to the line of commerce (the product line) and the "sections of the country" affected by the acquisition.

C. THE ISSUES

Aside from the preliminary question as to the relevant product market,[70] the issues framed by the pleadings and by the record are basically two: [71]

(1) Was Kennecott, before the Peabody acquisition, a substantial potential entrant into the product market in which Peabody competed—namely, the production and sale of coal?

(2) If so, did the elimination of Kennecott as a substantial potential entrant have the probable effect of substantially lessening competition in that product market in any economically meaningful geographic area?

As will be developed in more detail, the examiner has concluded, on the basis of the record in this case and the application of the legal principles established by prior decisions, that the answer to the first question is "Yes" and to the second "No."

The first issue is the essential preliminary issue, reflecting the language of subparagraphs 30(b) and 30(c) of the complaint, as well as the case law on the subject.

This issue, as delineated in subparagraphs 30(b) and 30(c), is whether Kennecott was a "substantial potential entrant" (1) in the sale of coal generally and (2) to electric utility companies specifically, in the stated geographic areas. It was on these two questions that the evidentiary record was essentially made.

Subparagraphs 30(a) and 30(d) of the complaint may be viewed as raising a further question—whether Kennecott was (1) a "substantial competitive factor in the coal business" [72] or (2) a "substantial

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[70] The examiner has found coal to be the relevant product market (*supra*, p. 763). The question of the relevant "sections of the country" is embraced in the second issue.

[71] Compare complaint counsel's statement of the "issue" in its brief (CPF–Br, p. 110).

[72] In their proposed conclusions, complaint counsel characterize Kennecott as "an existing substantial competitor in the coal industry"—but only in Utah and the Mountain States, while adhering to the language of the complaint in their other proposed conclusions (CPF–Br, par. (1) (1)–(7), pp. 125–26).

potential competitor having an actual and potential influence upon competition in the coal industry." (See CPF–Br. pp. 110–11.) However, the status of an acquiring company as a potential entrant in a line of commerce is significant for Section 7 purposes only if that status made the company a "substantial competitive factor" so as to influence the relevant competition, actually or potentially. This is the question essentially embraced in the second issue—whether the elimination of the potential entrant probably adversely affected competition, since no adverse effect could result unless the potentiality of entry was a significant competitive factor.

Subparagraphs 30(a) and 30(d) may be read, then, as specific allegations to the effect that Kennecott was recognized in the coal industry as a potential entrant and that Kennecott's role as a recognized potential entrant was a competitive force in the industry. The examiner considers that such an allegation is implicit in subparagraphs 30(b) and 30(c).

Subparagraphs 30(e) and 30(g), which are conclusory allegations of anticompetitive effects, in structural and behavioral terms, that are alleged to have occurred or to be likely to occur, are subsidiary to the broader question posed by the second issue.

As for subparagraph 30(f) to the effect that Kennecott's "vast resources as the leading company in the copper industry and its existing relationships with utility companies" will adversely affect the structure of the coal industry and the competition therein, this allegation is not supported by the record and has seemingly been abandoned, *sub silentio*, by complaint counsel since their proposed conclusions fail to contain any reference to it (CPF-Br, pp. 125–26). The record establishes that there are a number of coal producers, as well as producers of competing fuels, with greater resources than Kennecott. Kennecott's supposed "existing relationships with utility companies," and how they should be found to affect the sale of coal or the opportunities to compete therefor, are not explained in the record.[73]

II. "Line of Commerce" and "Section of the Country"

Section IV and Section VII of the Findings of Fact (*supra*, pp. 762, 884) have analyzed from a factual standpoint the "line of commerce" and the "section[s] of the country" in which this alleged

[73] This allegation presumably was based on a statement in a letter from J. C. Kinnear, Jr. to C. D. Michaelson that Kennecott's "long standing cordial relationship with western utilities and other industrial users should also be helpful in soliciting outside sales" of coal (CX 63–F; see C. D. Michaelson 5531, 5641–42).

violation of Section 7 is to be tested. There remains the necessity to indicate briefly the legal setting in which these factual determinations were made.

The appropriateness of designating the production and sale of coal as the line of commerce is so clear that no elaborate citation of authority is required. Suffice it to say that the examiner has essentially applied the standards established by such cases as *Brown Shoe Co.* v. *United States*, 370 U.S. 294 (1962), and *United States* v. *Bethlehem Steel Corp.*, 168 F. Supp. 576 (S.D.N.Y. 1958).

The rejection of all of the sections of the country proposed by complaint counsel as relevant geographic markets may require a somewhat fuller exposition.

This rejection was essentially based on a determination that complaint counsel simply failed to prove by evidence or by economic analysis that any of the areas corresponded to the "commercial realities" of the coal industry (*Brown Shoe*, *supra*, 370 U.S. at 336–37; *United States* v. *Continental Can Co.*, 378 U.S. 441, 457 (1964)). It obviously does not mean that there is no such area (compare CRB, p. 33).

The "area of effective competition" was not "charted by careful selection of the market area in which the seller operates, *and to which the purchaser can practicably turn for supplies*" [74] (*United States* v. *Philadelphia National Bank*, 374 U.S. 321, 359 (1963)).

When the Commission's economist disclaimed any informed basis for an opinion as to relevant geographic markets for coal, complaint counsel concurred and stated that these markets would otherwise be proved (Tr. 766–67, 774, 798–800, 820–21). But no such evidence was ever presented.

The examiner has already dealt with the applicability to this case of the *Pabst* decision (384 U.S. 546; supra, p. 885). The difficulty is that here, it has been carried to the *reductio ad absurdum* by the concept that it is sufficient to find an "anticompetitive effect somewhere in the United States" (CPF–Br, p. 104).

As to Utah, the only basis for its selection as a geographic market was the Knight-Ideal hypothesis, which lacked an essential factual predicate (*supra*, p. 886). In any event, the record establishes that state lines are irrelevant in coal competition. Contrary to the argument made by complaint counsel (CRB, pp. 33–34), the record demonstrates that Utah coal consumers can and do turn elsewhere than Utah for coal.

Kennecott and Peabody owned coal reserves in Utah, but no

[74] Citing *Tampa Electric Co.* v. *Nashville Coal Co.*, 365, 320, 327 (1961).

producing mine, so that Peabody was "brokering" Utah coal to fulfill its contractual commitments to Nevada Power Company, but this hardly provides a basis for concluding that Utah was the place "where, within the area of competitive overlap, the effects of the merger on competition will be direct and immediate." (*Philadelphia National Bank*, *supra*, 374 U.S., at 357.)

Finally, with complaint counsel dismissing as insignificant in the competitive picture the annual production of 4 million tons of lignite (*supra*, pp. 887–89), a question arises whether Utah's production of an equivalent amount of bituminous coal (almost half of which is captive) is "economically significant" within the meaning of *Brown Shoe*, *supra*, 370 U.S., at 336–37.

At the other end of the scale, complaint counsel posit the United States as the "market" for testing the acquisition. It is clear, however, that there is no national market for coal, although the structure of the industry nationally is a relevant factor to be considered.

Superficially, the Mountain Region may appear to be a proper geographic market, but, like Utah and the nation, it fails to comport with the "commercial realities."

As for the area west of the Mississippi River, this appears to have been added as a makeweight, and no meaningful effort was made to establish it as a relevant geographic market.

III. Kennecott As a Potential Entrant Into Coal

The record leaves no doubt that from 1963 until it acquired Peabody, Kennecott was a potential entrant into the production and sale of coal. But the record fails to establish that Kennecott was likely to enter de novo—by the acquisition of coal reserves and the development of an organization for producing and selling coal—rather than by the acquisition of an existing coal company.

The overriding theory of the complaint and of complaint counsel's presentation at all stages of this proceeding is that, beginning in the spring of 1963, Kennecott was moving purposefully and rapidly toward entry into the coal business until it was turned from its path by the opportunity to acquire Peabody.

The proof is to the contrary.

For complaint counsel the "heart of this case" is Kennecott's 1965 acquisition of the Knight-Ideal coal reserves, coupled with the setting in which this took place (CPF–Br, p. 64). This is the basis for the contention that Kennecott was a potential competitor in coal and a substantial competitive factor in the industry.

It accounts, too, for the geographic focus on Utah and the Mountain Region and imparts a "horizontal" aspect to Kennecott's subsequent acquisition of Peabody.

A brief recapitulation of the findings on this subject will demonstrate that Kennecott's purchase of the Knight-Ideal coal reserves was not intended to constitute, and did not constitute, a step in the large-scale diversification being sought by Kennecott, nor did it constitute Kennecott's entry into the coal business.

Since the early 1960's, Kennecott's management, concerned that Kennecott might become a "liquidating company" because of the wasting nature of its business and lack of growth opportunities, had been considering a number of industries as possible avenues of diversification and growth by Kennecott.

Kennecott had the incentive, the capability, and the intent to engage in a substantial diversification.

Coal was among several product lines under consideration; and beginning in 1963, Kennecott's management began to seek information about the coal industry. Kennecott's Western Mining Divisions ("WMD") was asked to undertake a study of coal as a diversification possibility. Instead, however, WMD focused its attention on a captive coal operation in Utah (1) that might provide fuel for its copper mining operations in Utah and in Nevada and (2) that might also serve as a base for expansion into the commercial coal business. There had been serious concern for several years over the rising cost of the natural gas used by Kennecott's Utah Copper Division ("UCD"). The Nevada operation was already using coal purchased in Utah.

As WMD began pursuing these dual objectives, management in New York decided that oil offered the best avenue of diversification. In November 1963, Kennecott employed an oil expert, who prepared an extensive, detailed report recommending acquisition of a medium-sized oil company. The board of directors gave its approval, in principle, in mid-1964, and the search for a suitable oil company got under way. The search continued through 1965, although by the end of that year, Kennecott's president had abandoned hope that a suitable oil-company acquisition would materialize. It would not have been feasible for Kennecott to engage in any large-scale diversification into coal at the same time it was planning to acquire an oil company.

Meanwhile, in mid-1965, WMD recommended the purchase of the Knight-Ideal coal reserves in Carbon County, Utah, for the purpose of a captive coal operation for its own fuel needs and as a base for

commercial coal sales. It recommended continued operation of the existing mine, including commercial sales, while a new mine was being developed.

Management rejected this last recommendation, ordered the purchase option contract revised to provide for acquisition of the reserves only, and arranged to shut down the existing mine. Thereafter, in the fall and winter of 1965, despite the fact that the board of directors had authorized an appropriation of over $6 million for development of a Knight-Ideal mine and despite repeated requests from WMD for authority to proceed with the project as WMD had originally envisioned it, management approved no steps along that line.

It is true that WMD had proposed the Knight-Ideal purchase and its operation (1) as a means of satisfying its own fuel needs and (2) as a base for entry into the sale of coal and that Kennecott's management had done nothing and had said nothing to discourage or rule out this concept while it was being proposed by WMD. However, as the Knight-Ideal project developed, the economics of the captive operation failed to prove out, and management declined to go forward with the WMD proposal. It simply bought the coal reserves, without any indication of when or how they might be exploited. Despite the skepticism of complaint counsel, there is ample record basis for respondent's contention that the board of directors, on the recommendation of top management, authorized the purchase of the Knight-Ideal reserves as protection against the escalation of gas prices—as a bargaining weapon and as an alternate source of fuel if they failed as a bargaining weapon.

Any likelihood of Kennecott's developing and operating a new mine at Knight-Ideal was dependent upon a decision by Kennecott to convert the UCD operations from gas to coal. This project had been predicated upon a base load of captive use, possibly with outside sales to improve the rate of return.

Kennecott did not take a single implementing step after the purchase of the reserves in June 1965 to develop a new mine. Any likelihood that it might have done so under the foreseeable economic conditions was eliminated by the end of 1965, when it was decided economical than any coal Kennecott could buy or produce. This that UCD would continue to use natural gas because it was more was several months before the beginning of negotiations between Kennecott and Peabody.

Despite the fact that reports from WMD, and the consultants it employed, were bullish over the prospects of a successful commercial

coal company based on Knight-Ideal, the record establishes, as respondent put it, that Carbon County, Utah, is an unlikely place for a large company to enter the coal business. Long-range prospects may indeed be bright, but Kennecott had an immediate problem, and Knight-Ideal was not the answer to it.

Even if the Knight-Ideal operation had proceeded in accordance with WMD's original plan, expansion from that base by the purchase and mining of additional reserves and the development of markets would have involved such a lapse of time and would have entailed such financial arrangements (minimal initial investment and delayed return) as to make the program incompatible with Kennecott's diversification objectives. Kennecott's basic diversification goals called for a substantial investment, with a significant return that would not be delayed, and the entry into a new business either in a small way or with a return deferred over a long period of time did not conform with these goals.

Despite the limited nature of the Knight-Ideal acquisition, and despite the fact that oil company negotiations were in progress, management maintained its interest in coal. In late July 1965, after the Knight-Ideal acquisition, Kennecott's president, Frank R. Milliken, conferred with his two vice presidents, C. D. Michaelson and C. H. Burgess, regarding the commodity objectives of the exploration department headed by Mr. Burgess. Mr. Michaelson was designated to head a coal division, and Mr. Burgess was to have primary responsibility for coal exploration. Mr. Milliken mentioned the need for a consultant on coal, and there was also an inconclusive discussion of possible coal-company acquisitions in which Peabody was mentioned. Diversification into coal was a possibility that was to be explored, along with other possibilities, such as fertilizer and sulphides.

There was some coal activity by the exploration department, including the submittal of an unrealistic bid on federal coal leases in Sevier County, Utah. The 1966 exploration budget, approved by Mr. Milliken in late 1965, included less than $10,000 for coal exploration.

Having in mind the need for a coal expert on Kennecott's executive staff, C. D. Michaelson in September 1965 employed a management consulting firm to find an experienced coal executive to guide Kennecott with respect to possible diversification into the coal industry, just as had been done in connection with the oil industry. The search was unsuccessful. Some consideration was then given to

acquiring a coal company as a means of obtaining a qualified coal executive, but this too came to naught.

By the activities described, Kennecott was obviously testing the water—getting itself educated about the coal business. De novo entry was certainly a possibility, at least in the early stages of Kennecott's consideration of coal as a means of diversifying, but at all stages and at all levels of such consideration, entry by acquisition loomed large (CX 25–B, CX 81 A–B; Kinnear 1910–11, 2068–69, 2141; S. D. Michaelson 5323–24; Robinson 4415; RX 185–A; *supra*, pp. 819, 860, 865–67, 876).

According to the weight of the evidence, it was not until March 1966 that Kennecott's interest in coal crystallized into a decision to enter the coal industry, and this led to the acquisition of Peabody. Until Kennecott began its consideration of acquiring Peabody, no staff study examining the coal business in depth had been prepared for consideration by management or by the board, and efforts to employ an executive capable of doing so had been unsuccessful.[75] The evidence does not permit a finding that Kennecott's management had ever formed an intention to enter the coal business de novo, or that if Kennecott had not decided in 1966 to undertake the acquisition of Peabody, it would have operated the Knight-Ideal mine or would have otherwise entered the coal business de novo. (See *supra*, p. 867.)

After Kennecott's efforts to diversify into oil failed of fruition, Kennecott's entry into coal by the acquisition of a going coal company was almost predictable. Its entry by internal expansion was not.

As far as the objective practicalities of Kennecott's de novo entry into coal are concerned, the weight of the evidence is that this would have been an unlikely step for Kennecott to take in the light of its diversification needs and objectives; the problems of finding, acquiring, testing, and developing substantial coal reserves; the difficulties of developing an executive and operating organization possessing the many specialized skills requisite for successful competition; and the unavoidably lengthy delay between entry and the ability to produce and sell coal on a significant scale.

With awareness of the holding in *United States* v. *El Paso Natural Gas Co.*, 376 U.S. 651, 657–58 (1964), that the fact that one attempt at actual entry by the potential entrant had been unsuccessful was "irrelevant," the examiner nevertheless considers that, on this

[75] Despite all the documents respecting Knight Ideal, their coverage was narrow and superficial. There was no coal study, nor was there a market study, remotely comparable to the oil study (CX 11) or to the report on the proposal to acquire Peabody (CX 154 A–Z–7).

record, the question whether Kennecott would have been a successful de novo entrant is a relevant factor both in the determination of the likelihood of its de novo entry and in the assessment of industry recognition of the potentiality of such entry (see *id.* at 660–61).

Complaint counsel's bootstrap argument that Kennecott's acquisition of Peabody constitutes proof of potential de novo entry (CPF–Br, pp. 92–93) finds its answer in *United States* v. *Crocker-Anglo National Bank*, 277 F. Supp. 133, 184 (N.D. Cal. 1967), where the three-judge district court ruled:

> [P]roof of entry or desire to enter by *merger* does not by itself prove the ability or desire to enter *de novo*.

IV. Lack of Evidence of Probable Adverse Effect on Competition

Even if Kennecott were held to be a potential de novo entrant into coal at the time it moved to acquire Peabody, the record nevertheless fails to prove that the acquisition violated Section 7 because:

A. Kennecott was not generally recognized as a potential entrant in the coal industry;

B. The coal industry is not highly concentrated, but is competitively structured;

C. There are numerous significant potential entrants into the production and sale of coal having specialized capabilities and incentives to enter; and

D. Sellers of coal must compete not only with other sellers of coal but also with sellers of other fuels, including oil, natural gas, and nuclear energy.

Each of these reasons will be briefly considered in the subsections that follow.

A. LIMITED INDUSTRY RECOGNITION OF KENNECOTT AS A POTENTIAL ENTRANT

The evidence fails to show that within the coal industry Kennecott was generally recognized as a potential entrant. Thus its elimination as a potential entrant had minimal competitive impact.

Although intent is important in measuring Kennecott's potentiality of entry, the importance of intent is subordinate to the facts respecting (13 industry recognition of such potentiality and (2) the competitive effects of such recognition. On both these subjects the record is deficient.

Unlike respondents or defendants in other potential-competition cases, Kennecott was not already engeged in the same line of commerce that it ultimately entered by acquisition. Nor, despite Kennecott's status as a mining company, was copper mining so closely related to coal that Kennecott was an obvious potential entrant in coal.

The evidence fails to show that Kennecott was recognized in the industry as a potential entrant to a degree that made it a substantial competitive factor. There is no proof that Kennecott's activities surrounding its acquisition of the Knight Ideal coal reserves had a "substantial impact" on the coal industry, causing "reverberations and reactions" throughout the industry, or that members of the industry, except perhaps for Peabody's regional sales vice president, viewed Kennecott as a "threat" CRB, pp. 2–3).

As an actual buyer of coal, as a potential buyer of additional quantities of coal, and as an owner of coal reserves, Kennecott was a competitive factor in coal in the Utah area. But the significance of this status has been overstated by complaint counsel.

From the evidence it appears that Peabody and Island Creek were the only commercial coal companies which had knowledge respecting Kennecott's coal activities. It is fair to say that Peabody did not welcome the possibility of gaining such a competitor in the Utah area, but this reaction was also coupled with concern over losing Kennecott as a potential customer. The evidence as to any reaction by Island Creek is tenuous.

In any event, many months before the negotiations with Peabody began, both companies were aware that the initial tentative plans of Kennecott's Western Mining Divisions to open a mine had been set aside by Kennecott's management.

At the time Kennecott began negotiating with Peabody, it was no longer (if it ever was) "at the edge" of the coal industry, nor can it be said that it "exerted considerable influence on the market." (Compare *FTC* v. *Procter & Gamble Co.*, 386 U.S. 568, 581 (1967).) Kennecott was not known to be "waiting anxiously to enter an oligopolistic market," nor did it constitute a "substantial incentive to competition" in coal. (Compare *United States* v. *Penn-Olin Co.*, 378 U.S. 158, 174 (1964).) The "array of probability" that convinced the Supreme Court that the joint venturers in Penn-Olin, *supra*, were likely individual entrants into the sodium chlorate market in the Southeast—and recognizable as such—does not exist in the instant case. Moreover, this "array of probability" was not sustained when the case was remanded. After additional evidence was received, the

district court dismissed on the ground that the Government failed to carry its burden of establishing that, but for the joint venture, one or the other of the parties probably would have separately entered the market, 256 F. Supp. 917, 928, 934 (D.Del. 1965), and this decision was affirmed by an equally divided Supreme Court, 389 U.S. 308 (1967).

B. STRUCTURE OF THE COAL INDUSTRY

The controlling judicial and administrative decisions under Section 7 have consistently and expressly recognized that in order for the elimination of even one of the most likely entrants into a market to have substantial potential anticompetitive effects, the market involved must be highly concentrated and must also be characterized by the presence "at the edge" of only a few potential entrants.[76] This subsection will consider the first of these factors—industry structure.

In contrast to the highly concentrated industries involved in the potential-competition cases, the coal industry can hardly be so characterized. The facts and figures are set forth at pages 791–95, *supra*, and will be simply highlighted here. Twenty-six different "affiliated operating groups" each produced 3 million tons or more of coal in 1967, and their aggregate production represented 57 percent of total domestic production. Sixty-eight groups each produced 1 million tons or more in 1967, and these groups accounted for 70 percent of total production.

In 1967, the 4 largest coal producers, including Peabody in first position, accounted for 29 percent of total production, and the 8 largest for just under 40 percent. No producer had as much as 11 percent of total production.

Even though there has been an upward trend in the percentage of production accounted for by the larger producers, the statistics obviously do not warrant complaint counsel's assessment of concentration in coal production as "pronounced" (CPF 41, CRB, pp. 18, 23); their own economic expert testified that it was "relatively low" (*supra*, p. 793). Moreover, in view of the economic factors that have led to greater "concentration" than in earlier years, it is an oversimplification to call the result "insidious" (CRB, p. 20).

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[76] *Procter & Gamble Co.*, 63 F.T.C. 1465, 1537, 1561, 1578 (1963), *rev'd* 359 F. 2d 74 (6th Cir. 1965), *rev'd* 386 U.S. 568, 578, 580–81 (1967); *United States* v. *El Paso Natural Gas Co.*, 376 U.S. 651, 658–62 (1964); *United States* v. *Wilson Sporting Goods Co.*, 288 F. Supp. 543, 562, 564 (N.D. Ill. 1968); *United States* v. *Ford Motor Co.*, 286 F. Supp. 407, 424, 426, 435, 441 (E.D. Mich. 1968); *United States* v. *Standard Oil Co.*, 253 F. Supp. 196, 208 (D.N.J. 1966); see also U.S. Dep't of Justice, Merger Guidelines, May 30, 1968, at 21–22.

In any event, Kennecott's entry into the coal business by its acquisition of Peabody has produced no real alteration in the structure of the coal industry. Kennecott is far from the largest company engaged in the coal business. There were 5 companies producing steam coal in the United States in 1967 that had greater total sales (coal and non-coal), and 5 that had greater assets, than Kennecott and Peabody combined. Three companies—Gulf Oil, Union Carbide, and Continental Oil—had greater sales and greater assets than Kennecott and Peabody combined.[77]

Of the 10 leading steam coal producers, 4 are oil companies (Continental Oil, Occidental Petroleum, Standard Oil (Ohio), and Gulf Oil). Two of the 10 leading steam coal producers (Gulf and Continental) have total assets and annual sales revenues each exceeding $2 billion (RX 170, *supra*, p. 793). Finally, Standard Oil (New Jersey), the world's largest industrial corporation in terms of assets,[78] has become one of the country's largest owners of coal eserrves and has entered the coal business by contracting to supply Commonwealth Edison commencing in 1970.

In light of these facts, Kennecott's entry into coal by acquisition is of no structural significance. Such entry created no increase in "artificial" barriers to entry, nor did it have an effect upon the existence or strength of the "natural" barriers that Kennecott had to consider (*supra*, pp. 871, 874–76; see Fox 6167–68).

The business of Kennecott and Peabody are not closely functionally related, and the Peabody acquisition cannot be characterized as a product-extension acquisition. No cost or other competitive advantage has been created at the production level.

There are no distribution and marketing similarities that might be productive of increased market power. Copper and coal are sold through different channels to entirely different classes of customers by completely different means.

Moreover, the fact that both coal and copper are industrial materials sold almost entirely to business enterprises as production inputs, indicates the complete absence of advertising as a factor in the marketing of either. Advertising was probably the single most important element in the finding of functional relationships productive of anticompetitive effects in the *Procter & Gamble* case,

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[77] RX 171. The figures given above leave out such large companies as United States Steel, Bethlehem Steel, Republic Steel, and Allied Chemical, which are considered "captive producers" and, in the case of the steel companies, producers of coking coal. United States Steel, however, on at least one occasion competed against Peabody and others to sell coal (lignite) as fuel to an electric utility (McGuire 4608).

[78] *United States* v. *Standard Oil Co.*, 253 F. Supp. 196, 200 (D.N.J. 1966); CX 188.

supra, 63 F.T.C., at 1572–73, as well as in *General Foods Corp.*, CCH Trade Reg. Rep. ¶ 17, 465 [1965–67 Transfer Binder] (FTC 1966) [69 F.T.C. 380], *aff'd* 386 F. 2d 936 (3d Cir. 1967), *cert. denied*, 391 U.S. 919 (1968).

Finally, there is no evidence that the Peabody acquisition has created any potential for the use of reciprocity, as Kennecott is not a significant customer of any of the utilities or other customers to which Peabody sells coal, and therefore could have no leverage to persuade such customers to buy fuel from Peabody rather than from other sources.[79]

There is no claim of Peabody's gaining a competitive advantage by combining its sales or purchase activities with those of Kennecott.

In summary, the acquisition did not alter the structure of the coal industry in any way or raise any barrier to entry; there is no relationship between the businesses of Kennecott and Peabody (such as may be present in a product-extension or market-extension acquisition) that might raise the possibility that market power possessed by Kennecott in a broad area of commerce could confer substantial competitive advantages upon Peabody; and the acquisition creates no opportunity for employment of reciprocity or for employment of reciprocity or for aggregation of buying or selling power. Thus, the principal factors that have been of significance in the leading conglomerate-merger cases are not even in issue in this case.

Although, from the standpoint of both economics and social values, it is traditional American doctrine that de novo entry by Kennecott, with the consequent injection of new competition, would have been preferable to its entry by acquisition,[80] this is not the test of legality under Section 7.

At any rate, when one considers the movement of oil and gas companies into the coal industry—companies that produce competing fuels—some comfort may be derived from the fact that Peabody was acquired by a company engaged in an essentially unrelated business, albeit both were engaged in mining. As a copper and coal enterprise, Kennecott-Peabody should provide some counter-balance to the developing "energy companies" with their control of various competing energy resources.[81]

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[79] See *supra*, pp. 755, 896.

[80] *United States* v. *Philadelphia National Bank*, 374 U.S. 321, 370 (1963); *United States* v. *Wilson Sporting Goods Co.*, 288 F. Supp. 543, 563 (N.D.Ill. 1968).

[81] The examiner is not here suggesting a defense of "countervailing power" to an otherwise illegal merger (*Philadelphia National Bank, supra*, 374 U.S., at 370).

In that connection, the examiner cannot ignore the fact that, as far as he is aware, there has been no governmental challenge to the acquisition of coal companies despite the interfuel competition affected by such mergers.[82] This is by no means to suggest that the mere fact that such mergers have not been proceeded against constitutes any basis for dismissing the instant case.

The examiner has no way of knowing the *ratio decidendi* that resulted in this governmental inaction, and he is not undertaking to judge the legality of matters not before him. Nevertheless, the unchallenged amalgamation of coal companies into oil companies is a factor that has some relevance in a proceeding concerned with the competitive health of the coal industry.

C. OTHER POTENTIAL ENTRANTS

In addition to the lack of concentration in the coal industry, there is still another factor that makes the elimination of Kennecott as a potential entrant of minimal competitive significance. This is the existence of numerous other potential entrants—a circumstance considered highly relevant in the leading potential—competition cases.[83]

Although complaint counsel are correct that the record does not disclose the number of potential entrants in coal, the evidence indicates they may be numbered in the dozens. However, complaint counsel dismiss this as "of min[u]scule importance" in the light of the magnitude of the Kennecott coal enterprise envisioned during Kennecott's search for a coal executive. (CPF–Br, p. 116; see *supra*, p. 863)

It is nevertheless a fact of considerable relevance that a large number of companies are potential entrants into the coal business on a substantial scale—companies that have specialized incentives and capabilities to enter. These include, in varying degrees of "potentiality," the major oil companies, natural gas companies, several electric utility companies, and some railroads.

As discussed in the Findings of Fact (*supra*, pp. 804–08), the oil and gas companies have two specialized incentives to enter:

(1) the prospect of utilizing coal for the production of synthetic petroleum products (*supra*, pp. 803–04); and

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[82] See the dissenting statements of Commissioner Elman and Commissioner Jones in Docket C–1450 [74 F.T.C. 1191], where a majority of the Commission approved, under the "failing company doctrine," the acquisition by Occidental Petroleum Corporation of Maust Coal and Coke Corporation. (CCH Trade Reg. Rep. ¶ 18,864 (1969); see ¶ 18,527 and ¶ 18,797). Occidental is the parent company of Island Creek Coal Company.

[83] See fn. 76, *supra*, p. 905.

(2) the desire to participate in the growth of another part of the energy industry.

They also have special capabilities to enter the coal business by reason of their experience in the marketing of fuels and their expertise in the basic science of hydrocarbons and in the technology of converting coal into petroleum products.

That the major oil and gas companies have been and are likely entrants into the coal business is clearly evidenced not only by these basic economic facts but also by the overt moves into the business or in the direction of entering the business that a number of them have made (*supra*, pp. 795, 804–08, 906).

The ownership of large reserves by some utility companies and the general interest of all utility companies in reducing their fuel costs make some of these companies potential entrants. Similarly, certain railroads may have an incentive to realize upon their ownership of substantial coal reserves through exploitation (Fox 6174–77). However, the utilities and railroads are less likely entrants than the oil companies and natural gas companies (Fox 6176). At any rate, considering only the major oil companies and natural gas companies, there are a large number of firms of substantial size with such significant capabilities and incentives as to make them likely entrants into the coal business (Fox 6177).

Consequently, the elimination of a single potential entrant into the production and sale of coal was not an event that was likely substantially to lessen competition in the production and sale of coal. The impact referred to by complaint counsel (CRB 17, 20–21) is conjectural and not supported by the record.

D. COMPETITION FROM OTHER FUELS

While the combination of the non-concentrated structure of the coal industry and the number and nature of other potential entrants compels the conclusion that the removal of Kennecott as a potential entrant did not create a reasonable probability that competition in the production and sale of coal would be substantially lessened, the existence of interfuel competition is another reason why the elimination of a single potential entrant into coal is of minimal competitive significance.

Demand for coal is highly cross-elastic with demand for competing fuels, including oil, gas, and nuclear energy, as well as hydropower. Although coal has been found to be the proper line of commerce, account must be taken of the competition that the coal industry faces from the sellers of other fuels. These sellers include a large number

of substantial companies. And the record clearly shows the competition between coal and each of these other fuels.

The basic limitation of the line of commerce to the production and sale of coal does not require the fact finder to close his eyes to the economic framework within which the coal industry operates. It is unrealistic to discuss the past, present, or future of the American coal industry except in the context of the energy industry as a whole. In this context, the conclusion is inescapable that the competition from other fuels is of such a nature as to circumscribe the market power of dominant firms, and thus to minimize the importance of a single potential coal entrant.

The record abounds with testimony that major buyers or potential buyers of coal consider the alternatives presented by sellers of other fuels each time a significant purchasing decision is made and that they are governed in making the purchasing decision almost entirely by considerations of cost. Major fuel buyers generally have an opportunity to choose among the various fuels on a competitive basis.

Consumption by electric utilities represents the most important and the only substantial growing use for coal. In addition to the competition that coal faces in this market from oil and natural gas in various parts of the country, nuclear energy has, in the past several years, made substantial inroads in competing with coal for this use and will provide increasingly intensive competition in the future. Suppliers of coal thus will have to achieve continuing cost reductions over the long term in order to maintain substantial sales to electric utilities, even in the heart of major coal-producing areas. This was clearly the thrust of the testimony of the electric utility executives who appeared as witnesses.

The examiner is persuaded that no evaluation of the competitive significance of a potential entrant into the coal business is realistic if it ignores the actual and potential competition of the other fuels with coal. And since potential entry, even more than most factors in a Section 7 case, requires inquiry into the future, it is necessary to judge the competitive impact of an acquisition not only on the basis of what is happening today, but also on what will probably happen in the foreseeable future. For coal, not only is there existing competition with other fuels, but this competition promises to grow with greater intensity as technological improvements occur. In recognition of this development, some companies producing one fuel have expanded into two or more other fuels, and some have already decided to become producers in four fuels, or "total energy" companies. (See *supra*, p. 907.)

In addition to the long-term impact that nuclear energy will have upon the sale of coal to electric utilities, it is necessary to consider also the fact that the only other potentially substantial use presently foreseeable for coal is as a raw material for the production of synthetic petroleum products. When liquefication and gasification of coal become commercial realities, perhaps by the 1980's, this will involve coal as a physical material in the most direct form of competition with oil and natural gas, so that the coal industry, in this phase of its business, at least, will become a part of the petroleum industry.

On this record, it appears that the actual and potential competition offered by other fuels, including nuclear energy, has a much more immediate and direct impact upon the decisions of buyers and sellers of coal and, therefore, upon the prices received by sellers of coal than does the presence of any single company as a potential competitor in the coal business.

A fortiori, even though Kennecott was a potential entrant, its elimination from such status cannot be said to have had any substantial competitive significance.

E. COMPLAINT COUNSEL'S PER SE THEORY

In view of all the foregoing considerations, it is perhaps not surprising that complaint counsel were driven to espouse a theory of "*per se* violation of Section 7" resulting from "*per se* potential entry" (CPF–Br. pp. 118, 111; see also pp. 58, 116, 121), so that they concluded that their "burden of proof is satisfied by demonstrating that a significant potential competitor has been eliminated" CPF–Br, p. 40). Their rationale was that "the same elements that prove the significance of the competitor establish that a significant effect upon the market would probably result if that competitor is eliminated as a potential entrant."[84] (*id.*)

This subordination of the need for specific facts regarding anti-competitive effects to a per se theory is evident on the first page of complaint counsel's brief, where the "issue" is stated to be

> "whether Kennecott was a potential entrant into the coal industry and whether activities in the coal industry made it an actual competitive factor in the coal industry. (CPF–Br, p. 110.)

There is no mention of the further question of the competitive effects likely to result from the elimination of Kennecott as a potential entrant and as a competitive factor.

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[84] Compare the remand decision in *Penn-Olin, supra,* 246 F. Supp. 917, 919 (D.Del. 1965), *aff'd by an equally divided Court,* 389 U.S. 308 (1967); see also 378 U.S., at 175–76.

However, the Commission has laid down a different standard and prescribed a different burden of proof:

> In every Section 7 proceeding, the burden is on the complainant to prove that the merger will create a reasonable probability of a substantial lessening of competition or tendency to create a monopoly. This burden is not met, in any case, by invocation of a talismanic *per se rule* by which to dispense with the need for adducing evidence of probable anti-competitive effect. Congress declared neither that all mergers, nor that mergers of a particular size or type, are *per se unlawful.* In every case the determination of illegality, if made, must rest upon specific facts.[85]

Complaint counsel have failed to meet this standard. They have not developed specific facts to show that the acquisition created a reasonable probability of a substantial lessening of competition. They have invoked a talismanic per se rule in order to dispense with the need for doing so. Their analysis purporting to show an adverse effect on competition does not rest upon specific facts but upon a series of hypotheses that lack the essential factual predicate.

The complaint should be dismissed for failure of proof.

CONCLUSIONS

1. The Federal Trade Commission has jurisdiction of the subject matter of this proceeding and of respondent Kennecott Copper Corporation ("Kennecott").

2. On or about March 29, 1968, Kennecott acquired the business and substantially all of the assets of Peabody Coal Company, an Illinois corporation ("Peabody").

3. At all times relevant to this proceeding, Kennecott and Peabody were engaged in "commerce" within the meaning of the Clayton Act.

4. For purposes of assessing the legality of the acquisition under Section 7 of the Clayton Act, as amended, the appropriate line of commerce (the product line) is the production and sale of coal, consisting of bituminous, sub-bituminous, and lignite.

5. The record fails to establish that the relevant geographic market—the area of effective competition—appropriate for testing the competitive effects of the acquisition is either Utah, the Mountain Region, the area west of the Mississippi River, or the United States.

6. The acquisition involved two companies that were not competitors.

7. Neither of the two companies was a significant customer or potential customer of the other.

8. Prior to Kennecott's decision in 1966 to acquire the business and

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[85] *Procter & Gamble Co.*, 63 F.T.C. 1465, 1548 (1963), *rev'd*, 358 F. 2d 74 (6th Cir. 1966), *rev'd*, 386 U.S. 568 (1967); see *Penn-Olin, supra*, 378 U.S., at 177.

substantially all of the assets of Peabody Coal Company, it was a potential entrant into the production and sale of coal, but it did not constitute a substantial competitive factor in that line of commerce.

9. Kennecott's purchase of the Knight Ideal coal reserves in 1965 was not intended to constitute, and did not constitute, a step toward the large-scale diversification being sought by Kennecott, nor did it constitute Kennecott's entry into the production and sale of coal.

10. The record fails to prove that Kennecott, but for the acquisition, would have been a de novo entrant into the production and sale of coal through the operation of a mine on the Knight-Ideal reserves or otherwise.

11. The record fails to establish that a high degree of concentration exists in the production and sale of coal or that there is any dearth of potential entrants. The record affirmatively establishes the contrary, so that the elimination of a single potential competitor lacks competitive significance.

12. Coal is produced and sold in competition with other fuels, and this interfuel competition is another factor that minimizes the competitive significance of the elimination of a single potential competitor in coal.

13. The record fails to support the allegations of the complaint that the effect of the acquisition, through the elimination of Kennecott as a potential competitor or otherwise, has been or may be to substantially lessen competition or to tend to create a monopoly in the production and sale of coal in any section of the country.

14. The acquisition was not in violation of Section 7 of the Clayton Act, as amended (15 U.S.C. ¶ 18), and the complaint should be dismissed.

ORDER

It is ordered, That the complaint be, and it hereby is, dismissed.

Opinion of the Commission

MAY 5, 1971

By MacIntyre, *Commissioner:*

Introduction

On August 5, 1968, the Commission issued its complaint herein charging that the acquisition of the Peabody Company by Kennecott Copper violated Section 7 of the Clayton Act (15 U.S.C. § 18). The complaint alleged that the effect of the acquisition "may be to lessen competition substantially or to tend to create a monopoly" in the

production and sale of coal. After extensive hearings, the hearing examiner, on March 9, 1970, dismissed the complaint. The case is before us on appeal of complaint counsel. Complaint counsel allege numerous errors in the examiner's findings of fact and in his conclusions based on these facts.

No controversy exists as to many of the relevant facts. The examiner's findings are incorporated and adopted except where they are inconsistent with the attached Findings of Fact. The principal disputes center around the conclusions, inferences and legal conclusions to be drawn from these facts.

The Industry

Since 1947 and up to 1960 the coal industry was plagued by steadily declining consumption. The turnabout began in 1960 when the soaring demand for electricity in turn stimulated the demand for coal for generation of electricity. Coal production increased from a low of 392 million tons in 1954, to 553 million tons in 1967. Consumption of coal by electric utilities rose from 86 million tons in 1947 to 272 million tons in 1967 when 70 percent of coal produced was used by electric utilities. By the year 2,000 it is expected that coal consumption by electric utilities will reach 755 million tons (Fdgs. 17–21).

Notwithstanding the ever growing demand for, and the concomitant expansion of production of, coal, the industry is experiencing a steady trend toward rising concentration. In 1947, there were 68 firms producing more than one million tons of coal annually. In 1947, their share of the domestic coal production amounted to 48 percent by 1917, it reached 70 percent. During the period 1954 to 1967, the top four companies increased their share of production from 15.8 percent to 29.2 percent. While during the same period the market expanded by 40.9 percent, the share of the top four companies grew by 160.5 percent. Further, the top four firms accounted for 62 percent of the total market expansion (Fdg. 20). This trend, unless halted, foreshadows ominous developments in the coal industry, with production and sale of coal concentrating in fewer and fewer hands. *Cf. United States* v. *Von's Grocery Co.*, 384 U.S. 270, 273, 274, 276–77 (1966).

On a regional basis concentration tends to be far more pronounced as evidenced by production figures for some Western States (Fdg. 21).

Peabody and Kennecott

At the time Peabody was acquired by Kennecott it was the largest coal producer in the United States with 1967 production of 59 million

tons. In this context, Peabody's growth rate is significant. Between 1955 and 1967, its sales rose by 41 million tons, from 19 million tons to 60 million tons. This increase constituted 45 percent of the nation's total increase. In 1965 Peabody accounted for 91 percent of the domestic expansion of coal production. (Fdg. 19).

Kennecott Copper is the nation's largest copper producer with 1966 sales of about $739 million. In 1966 Kennecott was the 55th largest firm in terms of assets and the 111th largest in terms of sales (Fdg. 1).

The Relevant Product Market

A threshold dispute exists as to the relevant product market. Complaint counsel urge that the pertinent line of commerce consists of bituminous and sub-bituminous coal. Respondent on the other hand, urges that the line of commerce should not be limited to coal but should encompass competing fuels in an "energy market" or a "boiler market," or, since 70 percent of the coal production is used for generation of electric energy, an electric utility market (I.D. 762). The examiner found, and we agree, that in light of the record evidence the relevant product market should be bituminous, sub-bituminous and lignite coal (I.D. 762–63).

Nevertheless, the examiner concluded that "[c]oal is produced and sold in competition with other fuels, and this interfuel competition is another factor that minimizes the competitive significance of the elimination of a single potential competitor in coal" (I.D. 913).

Coal, in our view, is clearly a relevant product market for antitrust purposes, separate and distinct from other fuels, by virtue of the fact that coal has unique characteristics which are commercially significant and a technology obviously different from such power sources as gas or nuclear energy.

The Commission had occasion on the same issue in similar circumstances in the *American Brake Shoe* case. On this point the Commission held as follows ([1967–1970 Transfer Binder] Trade Reg. Rep. ¶ 18,339 at 20,711 (FTC 1968) [73 F.T.C. 610, 674–675]) [1]:

> Finally, Brake Shoe's challenge to the examiner's line of commerce finding on the sintered metal submarket, grounded on the contention that it is barred by evidence of interchangeability, cannot be reconciled with the applicable precedents for:
>
> "* * * The issue under § 7 is whether there is a reasonable probability of substantial lessening of competition. There can be a substantial lessening of competition with respect to a product whether or not there are reasonably interchangeable substitutes." [Footnote omitted.]

[1] *Aff'd.* with slight modification, *Abex Corp.* v. *Federal Trade Commission,* 420 F. 2d 928 (6th Cir. 1970), *cert. denied,* 400 U.S. 865.

As the Third Circuit recently noted [*General Foods Corp.* v. *Federal Trade Commission*, 386 F. 2d 936, 940 (1967)]:

"* * * The fact that different products may in some sense be competitive with each other is not sufficient to place them in the same market if by themselves they constitute distinct product lines. *United States* v. *Aluminum Co. of America* (Alcoa-Rome Cable) 377 U.S. 271 * * * (1964). Nor does the availability of substitute products compel the conclusion that they belong in the same relevant market. *United States* v. *E. I. DuPont De Nemours & Co.*, 353 U.S. 586 * * * (1957) *Reynolds Metals Co.* v. *Federal Trade Commission.* * * *" [Footnote omitted.]

The market for § 7 purposes consists of "the product and probably its close substitutes, but does not embrace all products as to which there is a significant cross-elasticity of demand, or which are in a sense broad substitutes even though the existence of substitutes is among the factors which determine the extent of a firm's market power." [Footnote omitted.] The Supreme Court has established that although by reasonable interchangeability between substitute products, this does not preclude the existence of well defined submarkets valid for antitrust purposes within the confines of the broader market. [Footnote omitted.]

The boundaries of the submarket may be determined by reference to a number of practical indicia, including industry and public recognition of the submarket as a separate economic entity, the product's peculiar characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes and specialized vendors. [Footnote omitted.] Such a submarket may exist though only some of these criteria enumerated by the Supreme Court are applicable in the particular case. [Footnote omitted.] The sintered metal friction materials market by virtue of its unique technology and production facilities, a distinct price structure, and the products' peculiar uses and characteristics constitute a market economically significant and meaningful in terms of trade reality. [Footnote omitted.] The effect of the acquisition may properly be assessed within its confines.

We believe the examiner's conclusion unduly overstates the extent and effect of interfuel competition. Whatever interfuel competition may exist, it did not prevent rapid expansion of coal production resulting from the demand of electric utilities for electric generating purposes. As stated earlier, consumption of coal by electric utilities rose from 86 million tons in 1947 to 272 million tons in 1967, and is expected to reach 755 million tons by the year 2,000. Demand for coal by electric utilities has almost doubled in every decade. In 1967, 70 percent of the coal produced was consumed by utilities, and coal accounted for 55 percent of electricity generated in the United States (Fdg. 11). In view of these figures we cannot agree that interfuel competition has minimized the significance of the acquisition which should be tested in the product market hereinbefore defined.

The Relevant Geographic Market

The complaint charges that the acquisition may lessen competition substantially in the coal business "in Utah, the Mountain Region, and the United States and relevant portions thereof" (Complaint p. 749). Complaint counsel subsequently alleged the existence of an additional geographic market—the "area west of the Mississippi" or "the West."

Before analyzing the examiner's ruling on this issue, it is necessary to outline briefly the manner in which coal is marketed. The area in which coal may be marketed depends upon a variety of factors, including the location and size of coal reserves, the availability of coal reserves, the quality of the coal, the location of water reserves and the availability of suitable transportation. Since transportation costs of coal are high relative to its value and the distance coal can be economically shipped is limited, coal marketing tends to be confined to the geographic area of its production (Fdg. 12).

The examiner made similar findings (I.D. 886). He concluded, however, that the "record fails to establish that the relevant geographic market—the area of effective competition—appropriate for testing the competitive effects of the acquisition is either Utah, the Mountain Region, the area west of the Mississippi or the United States" (I.D. 912). He therefore found that complaint counsel had failed to establish any relevant geographic market.

We disagree. We believe that the record supports a finding that the nation as a whole constitutes a relevant geographic market. Although, in view of high transportation costs, the distance over which coal is being shipped is limited, the large coal companies nevertheless compete with each other throughout the United States. For example, Peabody and Consolidation Coal competed for the sale of coal in Nevada; Peabody, Consolidation Coal and others competed for the sale of coal in Utah; Peabody and Consolidation Coal competed for the sale of coal in Montana; and Peabody, Consolidation Coal, North American Coal, United States Steel Corporation and others competed for the sale of coal in Minnesota (Fdg. 13). Moreover, Kennecott intended to become a substantial nationwide producer with $100 to $200 million in annual coal sales which would have made it the third or fourth ranking producer in the United States and would have brought it into direct competition with other large producers such as Peabody, Consolidation Coal and Island Creek (Fdg. 30).

In dismissing the complaint for failure to prove a relevant geo-

graphic market within which to assess the impact of the acquisition, the examiner did not take into account authoritative case law. In *United States* v. *Pabst Brewing Company*, 384 U.S. 546 (1966), the Supreme Court held that it is not incumbent upon the Government to establish a relevant geographic market "in the same way the *corpus delicti* must be proved to establish a crime." Nor does the law require that a geographic market area be defined "by metes and bounds as a surveyor would lay off a plot of ground." The Court noted that the Government must "prove no more than there has been a merger between two corporations engaged in commerce and that the effect of the merger may be to substantially lessen competition or tend to create a monopoly '*in any section of the country*.'" Hence "the language of the statute requires merely the Government prove the merger has substantial anticompetitive effect somewhere in the United States." The Court states that "the failure of the Government to prove by an army of expert witnesses what constitutes a relevant 'economic' or 'geographic' market is not an adequate ground on which to dismiss a § 7 case." 348 U.S. at 549. Lastly, the Court laid down this key guideline (384 U.S. at 549–50; emphasis added):

> Proof of the section of the country where the anticompetitive effect exists is entirely *subsidiary* to the crucial question in this and every § 7 case which is whether a merger may substantially lessen competition anywhere in the United States.

In light of all the circumstances as detailed in our findings and in this opinion as well as in light of the Supreme Court's holding in *Pabst Brewing*, we conclude that the United States as a whole is the proper geographic market in which to determine the effect of the acquisition.

Kennecott as a Potential Entrant

The record leaves little doubt that Kennecott was a substantial potential entrant into the coal industry. In fact we feel that the record goes further and clearly indicates that Kennecott was an actual competitor. The record shows that Kennecott had an interest in the coal industry that dates back to early 1963 (Fdg. 23) when Kennecott was beginning to plan the productive investment of almost $1 billion of cash which it expected to generate by 1980 (Fdg. 3). Kennecott's interest in coal was twofold: (1) Secure a captive source of coal supply for the power requirements of its own Utah and Nevada operations; and (2) produce and sell coal on a commercial basis (Fdg. 26). It anticipated entry into the coal industry as a

major factor attaining eventual annual sales of $100 to 200 million which would make it the third or fourth ranking member in the industry (Fdg. 30).

The primary responsibility for evaluating entry into the coal business and for effectuating any decisions with respect thereto was assigned to Kennecott's Western Mining Division, then headed by Mr. J. C. Kinnear as general manager. Communications between him and Mr. C. D. Michaelson, Kennecott's vice president, show that Kennecott was strongly interested in a national, if not international coal operation (Fdg. 26). Initially, Kennecott focused its attention on coal in the West and specifically in Utah. Kennecott, however, expressed more than interest in and intention to entering the coal industry. It first took a number of steps to actually implement its intention. It purchased the coal reserves of the Knight-Ideal Company (Fdg. 26), hired a coal consulting firm (Fdg. 29), approved funds for the exploration of coal fields (Fdg. 29) and employed a management consulting firm to find a senior coal executive who could lead Kennecott into the coal industry. (Fdg. 30).

The record is also clear that Peabody, the leading firm in the industry, treated Kennecott as more than a potential entrant. It took a decided step to deter Kennecott from proceeding further on its chartered course of entry into the coal industry (Fdg. 32).

We have carefully reviewed respondent's contentions with respect to the issue of potential entry and find them without merit. Specifically, respondent argues that in all likelihood it would not have entered the coal business had it not acquired Peabody. Even if we were to assume, which we do not, that such was the case, that fact would not affect the determination that Kennecott was a potential entrant nor would it bear upon the issue of whether or not the acquisition is in violation of Section 7. The validity of a challenged acquisition does not hinge upon a respondent's claim that the only way it was willing to enter a particular industry was by acquiring the largest company in that industry. As outlined in the following section, the impact of potential competition must be evaluated in light of the state of competition in an industry whose members may or may not know the precise manner of entry by a potential competitor.

The Concept of Potential Competition

The rationale behind the concept of potential competition, in the simplest terms, is that the excess of effective demand over supply of a given commodity will in time increase production within the in-

dustry as well as attract outsiders to enter the industry, with the result that supply will be raised to the point where the price per unit approaches the marginal unit cost.[2] Adam Smith in 1776 observed:

> When by an increase in the effectual demand, the market price of some particular commodity happens to rise a good deal above the natural price, those who employ their stocks in supplying that market are generally carfeul to conceal this change. If it was commonly known, their great profit would tempt so many new rivals to employ their stock in the same way, that, the effectual demand would soon be reduced to the natural price, and perhaps for some time even below it.[3]

While the idea of potential competition as being an important check on monopoly prices had become common ground among economists, it was C. Wilcox's exposition in Competition and Monopoly in American Industry which gave the concept relatively wide circulation:

> Potential competition, either as a supplement to actual competition or as a substitute for it, may restrain producers from overcharging those to whom they sell or underpaying those from whom they buy. * * * Potential competition, insofar as the threat survives, may compensate in part for the imperfection characteristic of actual competition in the great majority of competitive markets.[4]

The concept was first reflected in monopoly cases and later in merger cases. In *United States* v. *Standard Oil Co.*,[5] defendants contended, in answer to a monopoly charge under Section 1 of the Sherman Act, that the oil companies involved were not actual competitors and that therefore the contracts for the control of the stock of these companies did not restrain competition. The Court, however, held that they were clearly "natural and potential competitors" and defendant's control of the stock of the companies prevented them from becoming actual competitors.[6] In *American Tobacco Co.* v. *United States*,[7] the Supreme Court based its decision,

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[2] Bain, Price Theory, Chapters 5 and 6 (1952); and Industrial Organization, at 286 (1959).

[3] Smith, The Wealth of Nations (The Modern Library, New York) 60. See also J. A. Hobson, The Evolution of Modern Capitalism, at 165 (1894); J. B. and J. M. Clark, The Control of Trusts, 25–27 (reprinted 1914); J. M. Clark, *Toward a Concept of Workable Competition* in American Economic Review, June 1940; F. W. Taussig, Principles of Economics, at 433 (1st ed. 1911); Joan Robinson, Economics of Imperfect Competition, at 81 (1932); B. W. Knight, Economic Principles in Practice, at 221 (rev. ed. 1942).

[4] TNEC Monograph No. 21, at 7–8 (1940).

[5] 173 F. 2d 177, 186 (C.C.E.D. Mo. 1909), *aff'd.* 221 U.S. 1 (1911).

[6] See Loescher, *A Sherman Act Precedent for the Application of Antitrust Legislation to Conglomerate Mergers: Standard Oil,* 1911, in Markham and Papanek, Industrial Organization and Economic Development, at 185–6 (1970).

[7] 328 U.S. 781, 797, 809 (1946).

finding a violation of Section 2 of the Sherman Act, in part upon the exclusion of potential competition, although the Court had no occasion to articulate the concept of potential competition in terms of market-structure analysis.[8] The Supreme Court has ultimately used the concept in merger cases to determine the legality of acquisitions in which the acquiring firm was a potential competitor of the acquired firm. *United States* v. *El Paso Gas Co.*, 376 U.S. 651, 659–61 (1964); *United States* v. *Penn Olin Chemical Co.*, 378 U.S. 158, 173–74 (1964); *Federal Trade Commission* v. *Procter & Gamble*, 386 U.S. 568, 580–81; cf. *United States* v. *Continental Can Co.*, 378 U.S. 441, 458, 464, 465–66 (1964).

The importance of potential competition, as the concept was developed by cooperation between economists and lawyers,[9] in an industry which is already highly concentrated is twofold: (1) If the oligopolists raise their prices too high, the potential entrant is induced to enter. Such entry would expand the supply of the particular product which would force prices downward. (2) The mere possibility of actual entry may be sufficient to restrain those in the market to hold their prices just below the point at which entry would be induced.[10] When a potential entrant does enter the industry through a substantial merger, not only is new competition not added, but a significant competitive influence is eliminated which was exerted by the potential entrant while remaining at the edge of the market.

Once having recognized the importance of potential competition, the question then arises under what conditions does the elimination of a potential competitor have the effect proscribed by Section 7 of the

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[8] In early Federal Trade Commission cases involving false and misleading advertisements, actual and potential competition were acknowledged to be essential ingredients of competition. *Hofeller* v. *Federal Trade Commission*, 82 F. 2d 647, 650 (7th Cir. 1936), *cert. denied*, 299 U.S. 557; *Federal Trade Commission* v. *Real Products Corp.*, 90 F. 2d 617, 619 (2d Cir. 1937); *Electro Thermo Co.* v. *Federal Trade Commission*, 91 F. 2d 477, 480 (9th Cir. 1937); *Justine Haynes & Co.* v. *Federal Trade Commission*, 105 F. 2d 988, 989 (2d Cir. 1939), *cert. denied*, 308 U.S. 616; *Dr. W. B. Caldwell, Inc.* v. *Federal Trade Commission*, 111 F. 2d 889, 890–91 (7th Cir. 1940); *Raladam Co.* v. *Federal Trade Commission*, 123 F. 2d 34, 36 (6th Cir. 1941). While not articulated in the decisions, the cases demonstrate that protection of both the consumer and competitor, including potential competition are the twin goals of antitrust enforcement policy. As the Supreme Court held in *Federal Trade Commission* v. *Raladam Co.*, "it is obvious that the word competition imparts the existence of present or potential competitors . . . ." 283 U.S. 643, 649 (1931).

[9] *United States* v. *Philadelphia Nat. Bank*, 374 U.S. 321, 363 (1963).

[10] Bain, *supra*, Industrial Organization, at 243. See also, Brodley, *Oligopoly Power under the Sherman and Clayton Acts—From Economic Theory to Legal Policy*, 19 Stan. L. Rev. 285, 289–93, 354 (1967); Turner, *The Scope of Antitrust and Other Economic Regulatory Policies*, 82 Harv. L. Rev. 1207, 1225 (1969).

Clayton Act? As a general rule, a violation of Section 7 has been found in those circumstances in which the acquired firm is a leading factor in a tight oligopoly. A tight oligopoly has been defined as an industry having a "very small number (eight or fewer) firms supplying 50 percent of the market, with the largest firm having a 20 percent or higher share * * *." [11] These circumstances, however, are not solely determinative whether an acquisition may constitute a violation of Section 7.

In the instant proceeding, while on a national level the industry may be considered a loose oligopoly,[12] two additional factors must be considered. First, as demonstrated in our findings, the growth of the leading firms compared with the growth of the coal industry as a whole, strongly indicates that the industry is on the way to becoming highly concentrated. The Commission cannot stay its hand until the industry has in fact been transformed into a tight oligopoly. Second, barriers to entry are high and are becoming more formidable (Fdg. 22). This development is described in Respondent's Answering Brief before the Commission in these words:

> Increased mechanization and the employment of large, more productive and more expensive equipment have been accompanied by an increase in the scale of mining operations. Large mines are best able to take advantage of mechanization, particularly the employment of efficient and extremely expensive equipment.
>
> Large mines are also necessary for the utilization of the lower cost methods of transportation. For example, a unit train is practicable only in the movement of substantial tonnages, justifying the dedication of locomotives and a sufficient number of coal cars to shuttle between mine and consumer [Record citations omitted].
>
> The significant increase in the size of electric generating plants that has occurred in the last twenty years has made the assembling of much larger coal reserves and the operation of much larger mines an absolute necessity for coal companies to compete successfully with suppliers of other fuels. (Pp. 31–32.)

The Effect of the Acquisition

In amending Section 7 in 1950, the basic concern of Congress was with forestalling the emergence of concentrated industries. As explained by the Supreme Court in *Brown Shoe Co.* v. *United States*, 370 U.S. 294, at 317–18 (1962):

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[11] Kaysen & Turner, Antitrust Policy, at 72 (1959).

[12] A loose oligopoly is "a small number (less than twenty) of firms supplying 75 percent of the market, with no one supplying more than 10–15 percent and a fringe of smaller firms supplying the rest." *Ibid.*

> . . . it is apparent that a keystone in the errection of a barrier to what Congress saw was the rising tide of economic concentration, was its provisoin of authority for arresting mergers at a time when the trend to a lessening of competition in a line of commerce was still in its incipiency. Congress saw the process of concentration in American business as a dynamic force; it sought to assure the Federal Trade Commission and the courts the power to brake this force at its outset and before it gathered momentum. [Footnote omitted.]

The Court applied in *Brown Shoe* the principle of arresting mergers while the trend toward concentration was still in its incipiency, in light of the following background data: The top 24 manufacturers produced about 35 percent of the nation's shoes. 370 U.S. at 300. Here, the top 8 firms in 1967 accounted for almost 40 percent of total domestic coal production (Findings of Fact, Table II).

Plainly, the examiner seems to have labored under the misapprehension that, as a practical matter, the Commission can act only in those cases in which a tight oligopoly had become an accomplished fact. Such a rationale would obviously thwart the intent of Congress and the purpose of Section 7 which requires the Commission to make a prediction of the merger's future impact on competition.

Another significant factor should be taken into account. In the present case one of the nation's 200 largest firms acquired the leading producer in an industry that is well on its way to becoming tightly oligopolistic. In weighing the validity of mergers of the instant type, the President's Council of Economic Advisors included in the 1970 Economic Report of the President the following guidelines (at 96):

> The Department of Justice has announced that it intends generally to adhere to its 1968 guidelines, but that it probably will oppose any merger among the top 200 manufacturing firms or firms of comparable size in other industries, or any mergers by one of the top 200 manufacturers with any leading producer in any concentrated industry. This program is based upon recent decisions of the Supreme Court condemning mergers that eliminate significant potential competition, entrench leading firms in concentrated markets, substantially increase the power of large firms to engage in reciprocity, or further a trend of mergers that would lessen competition.

Concern with the entrenchment of leading firms is particularly relevant in the present case. The record shows that Kennecott anticipates the generation of an enormous cash surplus from its copper operations in the coming years, and it will be inappropriate to reinvest this surplus in the copper business (Fdg. 2, 3). It is reasonable to predict that this excess cash will be used to expand Peabody's position in the coal industry. With this deep pocket of funds and other resources, Kennecott-Peabody will be able to bid for and

acquire coal reserves, finance massive mining developments, and aggressively compete for long-term utility supply contracts from a virtually unprecedented financial position. This situation clearly warrants concern that Peabody's dominance of the coal industry will be entrenched and enhanced as a result of the acquisition challenged in this proceeding.

Moreover, since owing to high transportation costs the distance over which coal is shipped is limited, consumers of coal are confronted in given areas with concentration ratios more akin to those found in some individual states which are much higher than the concentration ratios at the national level (Fdg. 21). Thus, the concentration data at the national level generally tend to understate the degree of concentration in a given local market.[13] For example, in Montana, one firm accounted for 82 percent of the state's total production in 1967; in New Mexico, one company accounted for 70 percent of the state's 1967 production. In Wyoming, one firm produced 39 percent and in Colorado four firms produced more than 50 percent of the 1967 output. In Utah 40 percent of the state's total output was produced by two companies for their own use (Fdg. 21). While it is not suggested that state boundaries should be used in the instant case to define a local market, these concentration data nevertheless are indicative of the type of structure existing in local markets, even though such markets may cross state boundaries. These figures, together with the shipping barriers of coal indicate that the local markets, in which the utilities as well as other consumers, purchase their coal are highly concentrated.

In light of the demonstrated trend toward high concentration and the formidable barriers to entry in the coal industry, it is imperative to preserve potential competition as a check upon the economic behavior of the members of the coal industry. As a result of the acquisition of Peabody, Kennecott was removed as a substantial competitor who exerted a restraining influence while it was implementing its plans to enter the market. We thus conclude that Kennecott's acquisition of Peabody may have the requisite adverse effect on competition so as to constitute a violation of Section 7.

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[13] See Mueller "Structure of the Petroleum Industry and Its Relations to Oil Shale and Other Energy Sources," report presented before the Senate Antitrust Subcommittee on May 5, 1967 (Economic Papers 1966-69, FTC, Staff Report, at 190, emphasis added):

"Although the 20 large petroleum firms account for a large percentage of all segments of the domestic industry, the petroleum industry is not as concentrated as many other basic industries * * * But *it should be remembered that most of the statistics on concentration in the petroleum industry are on a national basis and these generally understate the degree of concentration in local or regional markets* * * *"

Our conclusion is buttressed by the fact that, notwithstanding respondent's contentions to the contrary, Peabody, the leader in the industry, recognized Kennecott as a potential and actual competitor. While Kennecott was in the process of entering into the coal industry Peabody sought to keep Kennecott out of the coal industry. We can think of no more convincing evidence of not only industry recognition of a potential and actual competitor than industry's dramatic reaction when it appeared that the potential and actual competitor was on the verge of becoming a more substantial actual competitor. The salutory effects which Kennecott's entry into the coal industry would have had, as well as its impact by "sitting at the edge of the market," were completely nullified by its decision to substitute itself for the leading company in the industry.

As we recently stated in *The Bendix Corporation*, 3 Trade Reg. Rep. ¶ 19,288, at 21,443 (FTC 1970) [77 F.T.C. 731, 812]:

> With the growing concentration of American markets, and the growing mobility if business investments, the crucial role of "potential competition" as a regulation of economic behavior has been recognized. Not only is actual new entry an essential source of new competition, the potential for which must be preserved, but the mere threat of new entry by firms waiting at the edge of a concentrated, relatively uncompetitive market may be an important support for competition in that market. Thus, Section 7 clearly applies not only to mergers that substantially raise the barriers to new entry * * * but to mergers which, by eliminating potential competitors and entrants, have the likely effect of substantially lessening competition in the relevant market.

The identical *ratio decidendi* controls in the instant case. Kennecott's acquisition of Peabody, in an industry with an alarming trend toward concentration and high entry barriers, has the likely effect of substantially lessening competition in the relevant market.

The "Toehold" Theory

In his initial decision the examiner insisted that the case turns on the question whether or not Kennecott was a potential entrant *de novo*. Thus, the examiner states:

> The record leaves no doubt that from 1963 until it acquired Peabody, Kennecott was a potential entrant into the production and sale of coal. But the record fails to establish that Kennecott was likely to enter de novo—by the acquisition of coal reserves and the development of an organization for producing and selling coal—rather than by the acquisition of an existing coal company. (I.D. 898.)

His decision on this point conflicts directly with our recent decision in the *Bendix* case. We reached precisely the opposite conclusion in that case (*supra* at 21,445) [77 F.T.C. at 817]:

The examiner's analysis of the potential competition problem-focusing exclusively on the probability of Bendix's entry by internal expansion and neglecting the likelihood of entry by merger other than with Fram—was unduly narrow and must be rejected, because it rests upon a misconception of the basic purpose and policy of Section 7. Various forms of merger entry other than through acquisition of a leading company—for example, a "toehold" acquisition of a small company capable of expansion into a substantial competitive force—may be as economically desirable and beneficial to competition as internal expansion into a relevant market and must be considered in assessing the potential competition of the acquiring firm which has been eliminated as a result of the challenged merger.

This approach is consistent with the congressional intent,[14] as well as court and Commission decisions concerning a Section 7 enforcement policy. In the words of the Supreme Court in *Brown Shoe* v. *United States*, *supra*, 370 U.S. at 319:

> . . . at the same time that it sought to create an effective tool for preventing all mergers having demonstrable anticompetitive effects, Congress recognized the stimulation to competition that might flow from particular mergers. When concern as to the Act's breadth was expressed, supporters of the amendments indicated that it would not impede, for example, a merger between two small companies to enable the combination to compete more effectively with larger corporations dominating the relevant market, nor a merger between a corporation which is financially healthy and a failing one which no longer can be a vital competitive factor in the market. [Footnote omitted.]

In *United States* v. *Wilson Sporting Goods Co.*, 288 F. Supp. 543, 563 (N.D. Ill. 1968), the court observed:

> If instead [Wilson] entered by buying one of the small companies in the field, "it would have the effect of increasing the strength of a small company at the expense of the leading companies, and that would be more pro-competitive." [Footnote omitted.]

The Commission itself has followed this approach. "Congressional policy as expressed in Section 7 will be best served in this industry if merger activity is channeled toward the smaller firms." [15]

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[14] "Obviously, those mergers which enable small companies to compete more effectively with giant corporations generally do not reduce competition but rather intensify it." 96 Cong. Rec. 16436 (1950).

[15] *Beatrice Foods Co.*, FTC Docket 6653, issued April 26, 1965 [CCH 1965–1967 Transfer Binder] Trade Reg. Rep. ¶ 17,244 at 22,332 [67 F.T.C. 473]; order modified, *Beatrice Foods Co.* v. *F.T.C.*, 1967 Trade Cases ¶ 72,124 (9th Cir.) [71 F.T.C. 797]. See also, Turner, *Conglomerate Mergers and Section 7 of the Clayton Act*, 78 Harv. L. Rev. 1313 (1965); McLaren, *Antitrust and the Securities Industry*, 11 B. C. Ind. & Com. L. Rev. 187, 191 (1970). For repeated statements to this effect by Assistant Attorney General McLaren, Antitrust Division, Dept. of Justice, see 5 Trade Reg. Rep. ¶ 50,244 at 55,500 (March 27, 1969); 403 BNA Antitrust & Trade Reg. Rep. at X–2 (April 1, 1969); 412 BNA id. at X–2 (June 3, 1969); 5 Trade Reg. Rep. ¶ 50,259 at 50,544 (October 8, 1969); similar views are found in Campbell & Shepherd, *Leading-Firm Conglomerate Mergers*, 13 Antitrust Bull. 1361, 1371 (1968); see also, Narver, *Supply Space and Horizontality in Firms and Mergers*, 44 St. John's L. Rev. 317, 319 n. 9 (spec. ed. 1970).

Indeed, the antitrust goal established at a high level of government is to discourage substantial acquisitions and to channel merger activities into directions that would increase competition. Council of Econ. Adv. Ann. Rep. in 1969 Economic Report of the President (1969) at 108:

> * * * Mergers could have a healthy impact on concentration if acquiring firms of very large size were barred from purchasing the leading firms in other concentrated industries. The major route for entry into a concentrated industry by a very large firm then would be to build new capacity or to buy an existing smaller firm. When a very large firm buys a small firm in a concentrated industry, it has the resources to expand that firm's capacity and to try to increase its share of the market. Such a merger can infuse new vigor and ideas in that market.

This rationale is not limited to industries already highly concentrated but, in light of the incipiency concept underlying Section 7, applies with equal force to industries heading toward high concentration.[16]

Applying these principles to the instant proceeding we believe the examiner erred in his insistence that a finding of illegality depends on Kennecott being a potential entrant by internal expansion. The form of entry is clearly not a determinative factor. Respondent admits that it was a potential entrant by acquisition. While it does not concede that it would have entered by way of a small acquisition, the toehold principle nevertheless applies. With 68 producers in the industry in 1967, there obviously were smaller firms than Peabody which could have been considered as viable acquisition candidates.

Thus, it is our view that Kennecott could have entered the coal industry by way of acquisition of a small company rather than the industry leader. As we have said in *Bendix*, *supra* at 21,449 [77 F.T.C. at 825]:

> * * * if Bendix had been allowed to make such an entry, it would have become an actual competitor of Fram, just as Fram would have become an actual competitor of Bendix. That potential rivalry between a leading firm and a significant, well financed, resourceful, and likely new entrant by toehold acquisition was frustrated and extinguished by Bendix's merger with Fram. In the most fundamental and basic sense, the merger eliminated direct—indeed one

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[16] We heralded this view in our *Bendix* decision, *supra* at 21,445–46 [77 F.T.C. at 817]: "We think it clear that Congress was concerned in Section 7 with the preservation of new and potential competition in any form: that new entry, if beneficial and procompetitive, is to be encouraged regardless of its form, and that a merger with a leading firm, especially in a concentrated industry, which eliminates the likelihood of such desirable entry through a toehold acquisition is embraced within the prohibitions of the statute."

could say horizontal—competition between Fram and Bendix. And this competition is no less substantial and significant for antitrust purposes because it was potential rather than actual.

It should be added here that Kennecott had undertaken, but subsequently abandoned, actual steps to enter the coal industry in a significant way in favor of acquiring Peabody. This is all the more disconcerting since Kennecott, with its huge financial resources (estimated to amount to almost $1 billion by 1980), could have expanded the operations of a small company to attain, as originally contemplated by Kennecott, sales between $100 to $200 million per annum, making the small company the third or fourth ranking coal producer in the United States. As a result of the Kennecott-Peabody union not only a new competitive force was thereby lost but momentum was added to the alarming trend toward high concentration in the coal industry.

Summary and Conclusions

Our review of the record persuades us that the time to act in order to protect competition in the coal industry is now, before that competition becomes nonexistent. As detailed hereinbefore, we do not believe the Commission must wait until an industry has become engulfed in oligopoly's stranglehold before it can intercede. Nor was such the intention of Congress. Here, we are dealing with an industry which, although not yet highly concentrated is evidencing an alarming trend toward becoming so. The most desirable way in which this trend could be halted, or even reversed would be in the form of new entry by a company capable of becoming a meaningful competitor in the industry. At least one such company existed—Kennecott. The record is clear that not only did Kennecott intend to enter the coal industry but also that it had the capacity to become a substantial competitor once it had entered. Instead of entering the industry by way of internal expansion or by toehold acquisition however, Kennecott chose to acquire the leading company. While Kennecott was able to enter the industry and thus add substantial competition, it eliminated this competition by acquiring Peabody. Moreover, concentration on a regional level where the effect of the acquisition would be most keenly felt is extremely high. The elimination of a substantial potential entrant is therefore likely to have a deleterious effect on overall competition.

We might add that here Kennecott had undertaken actual steps to enter the coal industry in a significant way which were abandoned in favor of its acquisition of Peabody. Whatever intention or chance

of adding a new competitive force was thereby lost along with the attendant and very real risk of accelerating the already alarming trend towards concentration in the coal industry. We conclude that the effect of the acquisition may be substantially to lessen competition in the coal industry in violation of Section 7. An appropriate order will issue. In our view, an appropriate order here should provide not only for divestiture but also a ban for a period of ten (10) years on future acquisitions unless approved by the Commission. Heretofore we have taken such action where, as here, it is in the public interest and in furtherance of public policy.

In Camera Exhibit

During the course of this proceeding respondent requested *in camera* treatment of a number of exhibits identified as CX 11, CX 124 A–N, CX 125 A–C, CX 154 A–Z7, CX 163, CX 164 A–H, CX 196 A–E and RX 186. The examiner, after according *in camera* status to these exhibits on an interim basis, denied continued *in camera* treatment of these documents in his initial decision. On April 3, 1970, respondent filed a motion to review the hearing examiner's decision denying continued *in camera* treatment for the eight documentary exhibits. Action thereon was deferred by the Commission pending its review of complaint counsel's appeal on the merits.

In its motion of April 3, 1970, respondent has abandoned its request for continued *in camera* treatment of all but three documents, CX 163, CX 164 A–H, and the exhibit portions of CX 154, designated 154 V–Z7. The following reason is assigned by respondent to warrant continued *in camera* treatment of these documents:

> They were prepared specially for use in connection with the Peabody acquisition . . . [and] contain highly confidential business information and closely guarded secret data, which are not disclosed outside the company (except to involved institutions), and even within the company are confined to specific personnel. The disclosure of the data in these three reports * * * would cause very serious and irreparable injury to respondent and its competitive position. Moreover, there is no countervailing reason why this information should be disclosed to the public or to competitors. (April 3, 1970, motion, pp. 5–6)

Based upon a review of these documents, we have determined to grant respondent's request for continued *in camera* treatment of CX 163, CX 164 A–H, and CX 154 V–Z7. The remaining documents designated CX 11, CX 124 A–N, CX 125 A–C, CX 196 A–H, and RX 186 will become part of the public record.

Motion to Disqualify Commissioner Jones

In their Answering Brief (at p. 19), respondent requests reconsideration of its motion that Commissioner Jones withdraw from partic-

ipation in this proceeding, or, in the alternative, that the Commission determine that Commissioner Jones be disqualified from such participation. Respondent's original motion, dated December 31, 1968, was denied by Commission order of June 13, 1969. Since that time no new facts have come to our attention which would cause us to change our position in this matter. The situation is in the same posture as it was when we dealt with it the first time. Respondent's request for reconsideration will therefore be denied. Moreover, the Commission has traditionally and consistently viewed requests for disqualification as a matter primarily to be determined by the individual Commissioner concerned, leaving it within the exercise of that member's sound and responsible discretion. This is only proper and consistent with the law and no basis for departing therefrom has been demonstrated in the instant proceeding.

Findings of Fact, Conclusions, and Final Order

The Federal Trade Commission issued its complaint in this matter on August 5, 1968, charging respondent with violation of Section 7 of the amended Clayton Act (15 U.S.C. § 18) as a result of its acquisition of Peabody Coal Company. Hearings were held before an examiner, and testimony and other evidence in support of and in opposition to the allegations of the complaint were received into the record. In an initial decision filed March 9, 1970, the examiner dismissed the complaint on the ground that the record failed to support the allegations contained therein.

The Commission, having considered the entire record, the appeal of counsel supporting the complaint and respondent's answer thereto, and having determined that the conclusions contained in the initial decision are in error, all findings of the examiner inconsistent with the Commission's findings and opinion are hereby vacated. The Commission now makes the following findings and conclusions of fact and law, and order.

FINDINGS OF FACT

I

The Companies Involved

1. Respondent Kennecott Copper Corporation ("Kennecott") is a corporation organized and existing under the laws of the State of New York, with its executive offices located at 161 East 42nd Street, New York, New York (Answer p. 2). Kennecott, which also produces a number of other products, is the largest producer of copper in the United States (Answer p. 2). During 1966, Kennecott had sales of

about $739.7 million with net income of about $125.4 million (Answer p. 3). Among United States industrial corporations listed in "Fortune's 500" for 1966, Kennecott ranked 55th in terms of assets and 111th in terms of sales (CX 188, p. 6). At all times relevant to this proceeding, Kennecott has been engaged in "commerce" within the meaning of the Clayton Act (Answer p. 8).

2. Kennecott is primarily engaged in the production of copper, an industry characterized by fluctuations of sales and profits as well as uncertainty due to political conditions in developing nations in which much of the world's copper is mined. Moreover, the copper-ore content of the deposits presently being mined is steadily diminishing. Kennecott is engaged in an extractive business with declining assets and mounting reserves of cash (Tr. 6304).

3. As of July 15, 1966, Kennecott "had available in cash or securities approximately $150 million; up to $75 million net from the sale of Kaiser stock could be anticipated; its additional cash flow during the next 11 years was then estimated at $467 million; and this made a total of approximately $700 million whose productive investment had to be planned" for the coming 11 years (CX 2–N). "Productive investment" was to be accomplished by diversification of Kennecott's business operations (RX 236, 237 A–B). As part of the diversification program, in June 1965, Kennecott acquired the property of Knight-Ideal Coal Company ("Knight-Ideal") located in Carbon County, Utah, for $735,000 (CX 70) consisting of a mine and coal reserves capable of producing up to an estimated 1,165,000 tons annually (CX 61). The existing mine on the property at the time was producing 185,000 tons annually.

4. Prior to March 29, 1968, Peabody Coal Company ("Peabody") was a corporation organized and existing under the laws of the State of Illinois, with its principal office and place of business located at 301 North Memorial Drive, St. Louis, Missouri (Answer p. 9). Peabody was the leading coal producer in the United States (Answer p. 9). In 1966, its sales amounted to about $234 million, its net income to about $26.3 million, and its assets were $315.6 million (Answer p. 11). Among United States industrial corporations listed in "Fortune's 500" for 1966, Peabody ranked 186th in terms of assets and 317th in terms of sales (CX 188, p. 14).

5. Peabody operated approximately 37 wholly-owned domestic mines in the States of Alabama, Colorado, Illinois, Indiana, Kentucky, Missouri, Ohio, and Oklahoma, with additional operations planned for Arizona (Answer p. 10). As of mid-1967, Peabody owned, leased, or held under option more than 5.5 billion tons of proved recoverable coal reserves located in 14 States—Alabama, Arizona, Colo-

rado, Illinois, Indiana, Kansas, Kentucky, Missouri, Montana, New Mexico, North Dakota, Ohio, Oklahoma, and Wyoming (Answer p. 10). In addition, Peabody owned, leased, had under option or otherwise controlled substantial acreage in the West known to contain large amounts of coal but which had not been fully explored or tested for mineability (Answer p. 10; CX 162–T).

6. In 1967, Peabody produced 59.4 million tons of coal (RX 170–A). The second largest coal company, Consolidation Coal Company ("Consolidation Coal") produced 56.5 million tons and the third ranking company, Island Creek Coal Co. ("Island Creek") produced 25.9 million or less than half of Peabody's production (RX 170–A).

7. Between 1955 and 1964, Peabody's sales of coal grew from about 19 million to almost 60 million tons, a rise of approximately 41 million tons (Tr. 3665). This increase accounted for about 45 percent of the nation's total expansion of coal production (Finding 19, *infra*).

II

The Acquisition

8. Beginning in March 1966, contacts were made between Kennecott and Peabody officials relating to a proposed acquisition of Peabody by Kennecott and on July 19, 1966, an agreement was executed which provided for the acquisition of Peabody's assets by Kennecott at a price which was to yield $47.50 in cash for each share of Peabody common stock outstanding. At the time of the agreement the stock had a market value of less than $30 a share (Tr. 3674). The acquisition was consummated on March 29, 1968 for $285 million in cash (Answer p. 16).

III

The Relevant Product Market

9. Coal is generally classified as bituminous, sub-bituminous, anthracite, and lignite. In 1967, about 550 million tons of bituminous and sub-bituminous, 12 million tons of antracite, and about 3½ million tons of lignite coal were produced in the United States (Tr. 4107). The relevant product market, as found by the examiner (I.D. 762), consists of bituminous, sub-bituminous and lignite coal, hereinafter referred to as "coal," which constitute the overwhelming portion of total domestic coal production.

10. Between 1947 and 1960, domestic coal consumption has steadily declined. Railroads, once a major user which accounted for 25 percent of total consumption began to substitute diesel fuel for coal; and the

share of retail and miscellaneous users which represented another 23 percent, had fallen by 1960 to less than 5 percent of total coal consumption. Industrial consumption has experienced a similar though not as extensive a decrease (Tr. 3928; RX 148). However, in 1960, a turnabout came when coal consumption began to rise due to the growing needs of electric utilities. Since 1960, the major portion of coal produced, about 70 percent, has been consumed by electric utilities (Tr. 3940–43; RX 150).

11. As a source of energy, coal competes with natural gas, oil, hydropower and nuclear power because in most areas of the country the coal industry has been able to offer coal at prices below those of the other fuels and hence has shared in the growth of electrical generating capacity (Tr. 3932, 3997–4038). Thus, in 1947, coal consumed by utilities amounted to 86 million tons, in 1957, to 157.4 million tons, and in 1967, to 271.8 million tons (RX 147–A). Coal usage has grown over the years, although coal has not increased its relative share of the overall energy market at the same rate as other sources of energy. For example, coal usage for production of electricity is expected to reach 750 million tons by the year 2,000 (Tr. 4522–25; RX 189). Whether a market or a submarket, it is clear that coal is a product relevant to the measurement of the effect of the acquisition involved in this case.

IV

The Relevant Geographic Market

12. The area within which coal may be marketed depends upon a variety of factors including the location and size of the coal reserves, the availability of suitable transportation, the quality of the coal, the location of water supply and, more recently, the problem of air pollution (Tr. 3981–83). Since transportation cost of coal is high relative to the value of coal, the distance it can economically be shipped is limited (Tr. 3983). Hence, with a few exceptions (Tr. 4632), coal sales from a particular mine tend to be confined to the geographic area of its production.

13. Although only a few companies have national distribution, the leading coal firms which have strategically located mines nevertheless compete with each other throughout the United States for the sale of coal. For example, both Peabody and Consolidation bid on a contract, ultimately awarded to Peabody, calling for the delivery during a period of 35 years of a minimum of 117 million tons of coal beginning in 1970 to a new power station at Davis Dam, Nevada (CX 152; Tr. 5318). Peabody, Consolidation Coal, and others are competing for the sale of coal to Utah Power & Light Company in

Utah (Tr. 2966–67). Peabody and Consolidation also competed for the sale of coal to Montana Power & Light Company in Montana (Tr. 3638). Peabody, Consolidation, North American Coal as well as United States Steel Corporation and others competed for sales to Minnesota Power & Light Company in Minnesota (Tr. 4604–09). The increasing demand for coal by utilities in these and other Western states will require coal in quantities up to 105 million tons annually by 1980 (Tr. 4457–58). Large national companies can be expected to compete for these sales.

14. Prior to Kennecott's purchase of Knight-Ideal, Peabody had become aware of Kennecott's plans and in response thereto, among other things, considered for the purpose of forestalling the purchase (a) an offer to supply Kennecott's coal requirements for its power plants in Utah and Nevada which provide the power for Kennecott's copper mining operations in the two states or (b) an offer to enter into a joint venture with Kennecott to operate a coal mine (CX 53–B). While Kennecott was holding an option to the Knight-Ideal property, it competed with Peabody, Consolidation Coal and others for the sale of coal to Utah Power & Light Company referred to in Finding 13, *supra*. After the Knight-Ideal purchase by Kennecott, Peabody in fact attempted to dissuade Kennecott from opening a mine on the Knight-Ideal property by making two formal offers to Kennecott to supply the latter's coal requirements (CX 54, 55). Peabody recognized the importance of keeping additional competition out of the industry (CX 52, 53).

15. Kennecott, prior to its acquisition of Peabody, planned to become a national producer of coal in competition with other large national coal companies. It was aiming for annual sales of $100 to $200 million which would have made it the third or fourth largest producer in the United States (CX 84–B. see also Finding 31, *infra*). Mr. J. C. Kinnear, General Manager of Kennecott's Western Mining Division stated that:

> * * * Kennecott can organize to produce commercial coal as efficiently and cheaply as the present national major producers, and with the Knight-Ideal property as a base, can become a significant competitor for coal business in the intermountain and northwest United States * * * (CX 63–K).

Mr. C. D. Michaelson, Kennecott's vice president envisioned Kennecott as a national producer and was interested "in a comprehensive study of the coal potential in the entire West and possibly in the entire United States" (CX 19).

16. Based on these facts, it is found that the United States as a whole is an appropriate geographic area in which to test the effect of the acquisition.

V

The Changing Structure of the Coal Industry

17. Members of the coal industry are known as affiliated operating groups or producers. Each group or producer includes parent and its subsidiary corporations which together constitute a single decision-making entity (Tr. 4053–55).

18. Total domestic coal production rose from about 392 million tons in 1954 to about 553 million tons in 1967, an increase of about 161 million tons or 41 percent (RX 167 attached as Table I). During this period, and since 1947 around 70 producers or operating groups produced annually more than one million tons. In 1967, there were 68 such producers (RX 168). However, between 1947 and 1967, the combined share of the 68 producers in total domestic coal production grew from 48 percent to 70 percent (RX 168, 169). While in 1947, the 33 largest producers controlled 37 percent of the coal market, by 1967, and despite a greatly expanding market between 1960 and 1967, five producers alone controlled 32 percent, with Peabody and Consolidation Coal accounting for 21 percent (RX 170).

19. Peabody's own growth is significant. Between 1955 and 1964, Peabody increased its sales from 19 million tons to 60 million tons, a rise of 41 million tons (Tr. 3665). Total domestic production during this period expanded by 88 million tons of which Peabody accounted for 45 percent. In 1965, Peabody accounted for 91 percent of the total domestic increase in coal production (CX 183; RX 170; see also Table II).

20. In terms of production of the four and eight largest firms, the record shows as follows: The combined share of the top four producers rose from 15.8 percent in 1954 to 29.2 percent in 1967. During the same period, the top eight companies increased their share from 23.6 percent to 39.7 percent. While between 1954 and 1967, the market expanded by about 41 percent, the top 4 companies grew by about 161 percent and the top eight companies by about 108 percent. In terms of total market expansion, the 4 largest companies accounted for about 62 percent of the increase. The comparable figure for the top 8 is about 79 percent, leaving only 21 percent of the market increase to be shared by all other companies. There is thus a trend toward rising concentration in the coal industry which, unless halted in its incipiency, may bring about very high concentration—in that industry—in the foreseeable future.

21. On a regional basis, concentration is more pronounced as exemplified by production figures for some Western States. In Montana

Table 1.—U.S. Coal[1] *Production, Tonnage and Percentage Distribution by Size of Mine, 1947–67*

[Millions of tons]

Year	Class 1, 500,000 tons and over		Class 2, 200,000–500,000 tons		Class 3, 100,000–200,000 tons		Class 4, 50,000–100,000 tons		Class 5, 10,000–50,000 tons		Class 6, less than 10,000 tons		Total production
	Production	Percent of total	Production	Percent of total	Production	Percent of total	Production	Percent of total	Production	Percent of total	Production	Percent of total	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1947	262	41.5	155	24.6	88	14.0	50	8.0	60	9.4	16	2.5	631
1948	228	38.0	154	25.6	83	13.8	55	9.1	61	10.2	20	3.3	600
1949	128	29.3	120	27.3	70	16.1	48	10.9	50	11.4	22	5.0	438
1950	185	35.9	140	27.1	72	14.0	44	8.6	53	10.2	22	4.2	516
1951	226	42.4	136	25.4	65	12.2	43	8.0	47	8.8	17	3.2	534
1952	189	40.5	122	26.2	60	12.9	38	8.1	42	9.0	15	3.3	467
1953	203	44.4	121	26.4	50	10.9	33	7.2	36	8.0	14	3.1	457
1954	173	44.1	99	25.3	41	10.5	29	7.5	36	9.1	14	3.5	392
1955	220	47.4	105	22.5	47	10.1	33	7.2	40	8.7	19	4.1	465
1956	243	48.6	104	20.8	51	10.2	34	6.8	46	9.3	21	4.3	501
1957	239	48.5	105	21.3	45	9.0	33	6.7	52	10.5	20	4.0	493
1958	188	45.8	87	21.1	42	10.1	28	6.9	47	11.4	19	4.7	410
1959	205	49.9	79	19.2	37	9.0	27	6.6	43	10.4	20	4.9	412
1960	205	49.3	81	19.5	37	9.0	28	6.7	44	10.6	20	4.9	416
1961	203	50.4	73	18.1	34	8.4	30	7.5	46	11.3	17	4.3	403
1962	214	50.6	76	18.1	36	8.5	29	6.8	48	11.5	19	4.5	422
1963	243	52.9	77	16.8	36	7.8	34	7.4	50	10.9	19	4.2	459
1964	267	54.9	74	15.2	38	7.7	38	7.8	53	10.8	18	3.6	487
1965	293	57.2	72	14.0	39	7.7	38	7.5	54	10.6	15	3.0	512
1966	309	57.9	70	13.1	45	8.5	41	7.7	55	10.3	13	2.5	534
1967	327	59.1	77	13.9	52	9.4	38	6.8	49	8.9	10	1.8	553

[1] Coverage includes bituminous, sub-bituminous and lignite, as in Bureau of Mines statistics.

Source: U.S. Bureau of Mines, *Minerals Yearbook*, 1948–1966, (e.g., Table 12, p. 630, Volume I–II, 1966). U.S. Bureau of Mines, *Mineral Industry Surveys*, "Coal—Bituminous and Lignite in 1967," February 14, 1969, Weekly Coal Report No. 2653, Supplement, Table 14, p. 23.

Table II

	Production (millions of tons)	Percent of total
1954 [1]		
1. Pittsburgh Consolidation Group	22.9	
2. United States Steel	22.7	
3. Sinclair Southern	8.3	
4. Eastern Gas & Fuel	8.1	
Top 4	62.0	15.8
5. Island Creek-Pond Creek	8.1	
6. Bethlehem Steel	8.1	
7. Truax-Traer	7.2	
8. Peabody	7.0	
Top 8	92.4	23.6
Total, all companies	392.0	100.0
1966 [1]		
1. Peabody	54.0	
2. Consolidation	51.4	
3. Island Creek	23.7	
4. United States Steel	18.0	
Top 4	147.1	27.6
5. Pittston	15.5	
6. General Dynamics	13.6	
7. Eastern Associated	12.1	
8. Bethlehem Steel	11.2	
Top 8	199.5	37.4
Total, all companies	533.9	100.0
1967 [2]		
1. Peabody (Kennecott)	59.4	
2. Consolidation (Continental Oil)	56.5	
3. Island Creek (Occidental Petroleum)	25.9	
4. Pittston	19.7	
Top 4	161.5	29.2
5. United States Steel	19.0	
6. United Electric and Freeman (General Dynamics)	14.1	
7. Bethlehem Mines (Bethlehem Steel)	12.6	
8. Eastern Associated (Eastern Gas & Fuel)	12.3	
Top 8	219.5	39.7
Total, all companies	552.6	100.0

[1] From CX 183.
[2] From RX 170. The parent company, if any, is indicated in parentheses. The figures have been rounded.

one firm, the Knife River Coal Company, accounted for 82 percent of the state's total production in 1967 (RX 175–D). In New Mexico, the Utah Construction & Mining Company accounted for 70 percent of the State's 1967 production; the top three firms, Utah Construction & Mining Company, Kaiser Steel Corp. and Pittsburgh & Midway Mining Co., accounted for 99 percent (RX 175–E). In Wyoming, the largest firm, Pacific Power & Light Co., produced 39 percent of the state's 1967 output, and the top four firms accounted for 80 percent of the total (RX 175–G). In Colorado, four firms produced more than 50 percent of the 1967 output (RX 175–A). In Utah, 40 percent of the state's total output was produced by two companies, Kaiser Steel Corp. and U.S. Steel, for their own use. Of the remaining output, the two largest producers, North American Coal Corp. and United States Fuel Co., accounted for over 50 percent and the four largest for 71 percent (RX 175–F).

22. In addition to the national trend toward concentration and the existing high levels of concentration in regional or local areas as described in Findings 18–20, the record contains evidence that barriers to entry are high. The demand for coal by utilities and the increase in size of generating plants require assemblage of much larger coal reserves and operation of much larger mines (Tr. 4037–38; 4572–77). Fifteen years ago, a generating unit of 200 to 300 megawatts would have been considered large. Today, units of 4 to 5 times in size are being designed, and even larger units are contemplated for the future (Tr. 4576–78; 1598–99). The necessity of operating large mines requires the use of correspondingly large, sophisticated mining equipment which results in substantially greater capital requirements for the operation of a successful coal business (Tr. 3367; 3622–23; 4016–17; 4020–21; 4259). The cost of some of this equipment is so high that in order to recover its cost during its useful life it must be operated on a continuous basis. The depreciation of large mining machinery involves so much money that it is generally run 24 hours a day, 7 days a week (Tr. 3367; 4002). For example, depreciation on a large strip shovel at Peabody's River King mine is about $1 million a year, or $2.00 a minute (Tr. 3367). In addition, an entrant must hold adequate coal reserves to fill high-volume, long-term contracts and have access to the necessary transportation facilities. Thus, capital requirements are so great as to constitute a formidable barrier to entry into the coal business.

VI

Kennecott as a Potential Entrant

23. In its desire to diversify for the purpose of obtaining maximum utilization of its actual and anticipated financial reserves, Kennecott considered a number of industries. Its efforts initially focused on the oil industry as evidenced by a report entitled "Investigation of Entry into Oil Industry," (CX 11) dated July 6, 1964. The report is a study of possible oil-company acquisitions and begins with a section headed "Outlook for Kennecott" in which reference is made to those industries which have been considered at various times for the purpose of diversification. One of the industries discussed is the coal industry. The report noted that "[c]oal mining has possibilities and should continue to receive attention, however its return on sales is much lower than is Kennecott's and its return on investment has been less, although there has been some recent improvement. We are studying a western coal mining operation, having as a base captive use of coal at our mining properties" (CX 11, Record 8351). The study was

authored by Mr. Gordon Fisher, an experienced oil man, who had been hired on November 1, 1963 as an assistant to Kennecott's president, Mr. Frank Milliken, for the purpose of analyzing the oil industry and its potential for Kennecott (Tr. 4654). Indeed, Mr. Milliken collaborated closely with Mr. Fisher in drafting certain portions of the report because in his capacity as president he wanted to be able to advise the board of directors as to management's thoughts on the subject of diversification (Tr. 6318; Tr. 4662).

24. With respect to the "Investigation of Oil Industry," Mr. Milliken testified as follows (Tr. 6318–20):

Q. Did you participate in the drafting of the first three pages?

A. Yes, a chap that worked for me by the name of Gordon Fisher prepared the bulk of this document and he and I worked together, somehow, on these first three pages. He made an original draft and I reviewed it.

Q. Now, sir, I call your attention to Page 3, paragraph 3, which reads: "Coal mining has possibilities and should continue to receive attention, however, its return on sales is much less than is Kennecott's and its return on investment has been less, although there has been some recent improvement. We are studying a western coal mining operation, having as a base captive use of coal at our mining properties."

Would you tell me, sir, what you meant by those statements, sir?

A. Well, we had a number of industries in mind that might serve for diversification purposes for Kennecott: oil, coal, aluminum, fertilizers, those kinds of industries that seem to meet, let's say, the standards that we talked about earlier. I think in this write up, we say or talk about aluminum, metals, and we mention coal and fertilizers—in that same context. All I meant by the first sentence in Item 3, is that we are aware of coal as a possibility for diversification. As far as the second sentence is concerned, as I have indicated, I knew that in the west they were concerned about acquiring coal to help in their fuel situation at the Utah operation. I felt that this might come up to the Board some time, that the Utah Copper Division wanted to buy some reserve in relation to their problem and the Board should know this, so that, you know, they would not be surprised at the time.

Q. At this time, sir, was there any consideration given to diversification into coal?

A. Only to the extent that I have indicated here. Because in the back of our minds, like the other industries, once they had met the criteria that we had established—but there was no active work going on toward it at this time.

25. Prior to the date of the report (July 6, 1964), Kennecott had at various other times pondered entering the coal industry. On April 16, 1963, Mr. C. D. Michaelson, vice president of Kennecott wrote to Mr. J. C. Kinnear, general manager of Kennecott's Western Mining Division the following letter (CX 14):

When you were in New York, we discussed the advisability of conducting a study on the possibility of coal operations in the West. You should start this investigation immediately, if you have not already done so.

I would suggest as a preliminary that perhaps you might consult Paul Shields on the possibilities of coal development in the West. If he has any good ideas, then you might probably want to investigate them either through Shields or through some other competent person in the field.

I would think that your investigation should be along the line of a coal mine with a pit head power plant of the general style of the Four Corners operation of Utah Construction. However, I would not rule out the possibility of special coals such as metallurgical or coals that could be delivered to a market at a price superior to other mines.

(The Four Corners operation of the Utah Construction Company is the largest coal mine west of the Mississippi River and when full production is reached it will have the highest output of any coal mine in the United States (Tr. 1215–16).) Mr. Kinnear replied to this letter on July 25, 1963, suggesting that the most prudent method of entering the coal business would be to acquire Utah coal property which not only would be a source to supply captive requirements but would provide Kennecott with a base load to develop experience in the business (CX 20). He also suggested that the property could be used as a springboard to negotiate long-term outside sales commitments as well as permit Kennecott to expand into other areas by acquiring additional properties to satisfy the coal demand of markets that may be developed. The Western Mining Division periodically reported to Kennecott's management concerning the progress it was making in its consideration of acquiring coal properties (CX 20, 21, 25, 29, 47, 63, 64, 86, 90).

26. From correspondence between officials of Kennecott's Western Mining Division and Kennecott's top management in New York, it appears that the latter directed the Western Mining Division to broaden the scope of its study of the coal industry to include the feasibility not only of providing Kennecott's western coal requirements but also of entering the coal industry on a national or even worldwide scale. For example, on October 4, 1963, Mr. Kinnear reported to Mr. Michaelson as follows (CX 24):

My letter report of July 25, 1963 covering the feasibility of an initial Kennecott coal operation in the Carbon County, Utah area was to comply with our understanding of your original request for a feasibility study on "coal operations in the West." Acting on your further and recent comments to increase the scope to include national and possibly international markets, we are now outlining the alternate ways to proceed with the study on this vastly increased basis. Our recommendations will be forwarded to you next week.

On October 22, 1963, Mr. Kinnear again wrote to Mr. Michaelson:

This letter responds to your phone call request that the preliminary feasibility study for a Kennecott coal operation be expanded in scope to cover the national coal market and perhaps worldwide coal markets as well. (CX 25 A–B.)

In a communication to Mr. Michaelson dated November 1, 1963, Mr. Kinnear stated (CX 26):

In my letter of October 22nd to you, I summarized WMD thinking on a Utah coal operation to supply the Utah and Nevada divisions plus outside sales in the inter-mountain area and further west, and additionally outlined alternate approaches for determining or acquiring national and/or international coal markets for Kennecott. I would appreciate receiving your comments on this letter or being given the opportunity to discuss the matter with you before taking further action leading toward a Kennecott coal operation in the west or on a broader scale.

Another Kinnear-Michaelson exchange dated January 3, 1964, contains the following summary (CX 29 A–B):

In my letter of October 22, 1963 to you I outlined the results of our preliminary feasibility study for a Kennecott coal operation in Utah, recommended starting such an operation to supply an initial outside market and the Utah and Nevada Divisions, and suggested alternate methods of ascertaining if a wider coal marketing potential should exist for Kennecott.

27. In the course of its considerations, Kennecott's interest in the coal industry centered on Knight-Ideal in Carbon County, Utah, where this company had its coal reserves (CX 32–36). Kennecott's Western Mining Division, in its recommendation to purchase Knight-Ideal, proposed sales of coal to major commercial users. It suggested the creation of a coal mining subsidiary, with the necessary managerial personnel, including a sales representative, "to take over the operation, build outside sales volume, and construct and operate an efficient new coal mine on the property" (CX 63–L, 64–B). Mr. Kinnear stated that (CX 63–K):

* * * Kennecott can organize to produce commercial coal as efficiently and cheaply as the present national major producers, and with the Knight-Ideal property as a base, can become a significant competitor for coal business in the intermountain and northwest United States.

Kennecott subsequently obtained an option to acquire Knight-Ideal (CX 44 A–J). It is manifest from contemporaneous documents covering the period of Kennecott's first interest in the coal industry in 1963 to the eventual purchase of Knight-Ideal in 1965 that Kennecott's goal was two-fold: (1) Secure a captive source of coal supply for the power requirements of its Utah and Nevada mining operations and (2) produce and sell coal on a commercial basis. For example, the "Preliminary Economic Evaluation" recommending the purchase of Knight-Ideal states (CX 61–H):

This is the first phase of an overall feasibility study of the benefits to be derived to Kennecott through entering the coal business, not only to supply

the Corporation's western operation's captive requirements for coal, but also to aggressively seek particularly to supply the requirements of western power companies and other major consumers.

28. The report also contemplated that the mine located on the Knight-Ideal property be closed after then existing contracts were completed since it only produced about 185,000 tons of coal annually, less than half of Kennecott's own requirements, entirely apart from the mine's inability to supply any quantities for outside sales. It states that (CX 61, p. 17):

The mining plan calls for a new mine portal to be constructed in Pace Canyon at an approximate elevation of 7,000 ft. in the southwest corner of the property.

Similarly, correspondence during July 1964 between officials of the Western Mining Division and the president of Kennecott specifically and repeatedly refers to the opening of a new mine and did not at any time contemplate continued operation of the old mine (CX 37, 38, 39). A new mine was to be opened at a new location (CX 61-G, 63-64, 67-G). The proposed purchase agreement included a provision to the effect that the existing mine be closed immediately (CX 68-E).

29. Kennecott's board of directors approved "the proposed purchase of the coal deposits and other real estate . . . on the terms and conditions as described" and authorized the corporate officers "to carry out such purchase, and in that connection, to sign any and all documents and take all further action, including the formation of a subsidiary corporation to hold and operate this property, as they deem necessary or desirable." At the same time the Board approved a request for authorization of an initial expenditure of $6,244,000 for development of a new mine (CX 66 A-B). The purchase agreement was executed on June 21, 1965 (CX 68 A-I). Title to the property was transferred to Kennecott on July 21, 1965 (CX 79, 82).

30. Subsequent to the acquisition of Knight-Ideal, Kennecott engaged the services of a coal consultant to advise the company as to whether it should purchase additional coal reserves or acquire coal companies rather than reserves (CX 81-A). The memorandum discussing employment of a consultant also states that "the acquisition of companies would make for faster progress." Meanwhile, Kennecott, through its Western Mining Division, submitted a bid on federal coal leases involving 1,375 acres in central Utah which were being offered by the U.S. Bureau of Land Management (CX 91-A). The bid was unsuccessful. During the period before and after the Knight-Ideal acquisition, but prior to the Peabody acqui-

sition, Kennecott was actively interested in acquiring additional coal reserves (CX 34–36, 39–40, 45–47–C, 49–B, 51–C, 61–G, 83–B, 87 A–B, 90–93, 96–97). The Heiner-McKinnan properties adjacent to Knight-Ideal were considered (CX 45 A–B, 46 A–B, 47 A–C). An offer looking toward an option to purchase one-half of these properties mas made but rejected (CX 83–B, 87–A), and the one-half interest was later sold to Island Creek Coal Co. (CX 90–A, 91–A). The Western Mining Division also requested authority to negotiate an option to purchase 1,550 acres of coal lands owned by Premium Coal Company (CX 90–B). On December 10, 1965, six months after the Knight-Ideal acquisition, a request for supplemental appropriation of funds to explore a large coal field in Sevier County, Utah, was approved by Kennecott (CX 92–A).

31. It was anticipated that Kennecott would enter the coal industry to become a major factor, attaining eventually annual sales ranging from $100 million to $200 million (CX 84–B). To this end, during the period following the Knight-Ideal purchase and prior to the Peabody acquisition, Kennecott was actively engeged in search for a coal executive. In September 1965, Kennecott retained the management consulting firm of Booz, Allen & Hamilton, Inc. "to undertake a search for a senior executive to lead [Kennecott] into the coal business" (CX 84–B). The person Kennecott had in mind should be chief executive of an operating subsidiary of a coal producer and should "have the drive to develop and guide a significant new enterprise within the coal industry" and should be capable of "identifying and developing new properties." He would be responsible "for building a new coal business on the soundest possible basis, whether it be through the acquisition of a significant company, the acquisition and merging of small companies, or the acquisition and development of coal properties" (CX 84–D, F).

32. During the period Kennecott was pondering the purchase of Knight-Ideal, Peabody considered several defensive steps to ward off Kennecott's entry into the coal industry. Mr. Hugh B. Lee, Jr., vice president and general sales manager of Peabody on June 7, 1965, noted that:

> The head start gained by Peabody in Utah is threatened by recent action and indicated action by Island Creek and Kennecott. Island Creek has acquired the Heiner properties and obviously plans to develop them. On June 3rd, Western Mining Division of Kennecott sent a recommendation to their top management that the Knight-Ideal properties (2500 acres—50,000,000 tons) be acquired and a modern mine be installed to serve Kennecott operations (450,000 to 700,000 tons annually) plus aggressively seeking outside sales to utilities

and industries. An investment (including spur from D&RGW main line) of about $5,000,000 is contemplated. Michaelson, Chief Engineer Western Division, sees this as a possible step toward major diversification by Kennecott through subsequent acquisition of coal properties in the East or Midwest. Art Macke's report on the Knight-Ideal mine (200,000 tons annually) estimated a mine cost of $2.70 per ton for washed coal. (Company Union—UMWA scale, but favorable labor conditions, and 10–15¢ welfare). *If* Kennecott chooses to acquire Knight-Ideal and put in a modern mine (decision by June 21st), we have the following alternatives:

1. Ignore Kennecott and proceed with our own decisions and action.
2. Promptly make offer to Kennecott for their coal requirements (perhaps coupled with offer of restricted sublease of part of Huntington Corp. property to satisfy Kennecott's desire for defensive position) that is attractive enough to dissuade them from acquiring or operating Knight-Ideal.
3. Offer to enter into joint venture with Kennecott (Peabody to operate with fee) to put in modern mine in Huntington Canyon or Knight-Ideal area. (Michaelson is receptive.)
4. Abandon thought of Peabody operation in Utah, place Nevada Power commitment at Kennecott's new mine and function as limited or exclusive sales agent for the proposed mine. (CX 53.)

Peabody, in addition to recognizing Kennecott's intent to secure a captive coal supply source, was acutely aware of, and viewed Kennecott as a potential entrant into the coal industry. It attempted to dissuade Kennecott from entering the coal industry, be it for the purpose of obtaining its own captive requirements or of becoming a full-fledged, major member of the industry. Mr. Lee, Peabody's vice president and general manager, "has called on [S. D.] Michaelson four times in the last six weeks and has been frank to state that Peabody does not want Kennecott in the coal business for either its captive requirements or outside sales." (Kinnear letter of March 5, 1965 to Michaelson, CX 51–D.) Further evidence of Peabody's concern is an intercompany memorandum by Mr. Lee that Mr. S. D. Michaelson, chief engineer of the Western Mining Division, was "convinced a captive coal mine operation that could lead to outside commercial sales would be a desirable diversification along with an assurance of long term favorable fuel costs" (RX 9–A).

33. We find that, in light of its intentions, capabilities, financial resources, and proximity to the coal industry, as well as the fact that it was recognized as such by Peabody, the leading industry member, Kennecott was a most likely entrant into the coal industry.

VII

Other Potential Entrants

34. Dr. Fox, the respondent's expert economic witness testified that in his opinion there are dozens of other potential entrants into the

coal industry (Tr. 6177–79). However, there is no record evidence with respect to these potential entrants, and the record does not show to what extent these unidentified potential entrants have the financial resources to build a substantial coal business, and, if they had the intention to enter the coal industry, how and when they planned to enter. No other potential entrant was identified which was as likely a potential entrant as Kennecott.

VIII

Ownership of Reserves by Non-Coal Companies

35. The record contains evidence of the possession of coal reserves by firms other than members of the coal industry. These are oil companies, natural gas companies, electric utilities, and railroads (Tr. 6169). Electric utilities and railroads are not considered likely potential entrants (Tr. 6176–77). With respect to oil and natural gas companies, the record demonstrates that their primary interest in acquiring coal reserves lies in converting coal into synthetic fuels, and that liquefaction and gasification rather than the sale of coal is their target (Tr. 6171–73). Liquefaction refers to the process of converting coal into oil for producing oil-related products such as gasoline, and gasification refers to the process of converting coal into gas (Tr. 3348–49). The basic technology of coal conversion and the expertise needed for refining and distributing the resulting synthetic fuels are unrelated to the coal business in its present form (Tr. 6171–73). Liquefaction of coal is likely to become a commercial reality during the 1970's and gasification on a commercial basis is expected to occur shortly thereafter (Tr. 4069, 4074, 5751).

IX

The Effects of the Acquisition on Competition

36. Kennecott intended to become a significant competitor in the coal industry, one way or another (CX 63–K). It also planned to become a national producer in competition with nationwide coal companies on a scale large enough to have made it the third or fourth ranking producer in the United States (CX 84–B). When as the result of the acquisition of Knight-Ideal Kennecott's intentions to enter the coal industry became known, Peabody, the largest coal company in the United States, immediately pondered ways and means designed to deter Kennecott from entering the industry (CX 53). As the result of its acquisition of Peabody, Kennecott removed itself as a substantial potential competitive force. What-

ever salutory effect on competition Kennecott exerted at the edge of the market was lost when it substituted itself for the largest company in the industry. Kennecott's action must be viewed against the background of high entry barriers and a rising trend towards concentration in the coal industry at the national level, notwithstanding the steadily growing demand for coal. Based on all the facts hereinbefore detailed, it is found that the acquisition may substantially lessen competition in the coal industry.

CONCLUSIONS

1. The Commission has jurisdiction of the subject of this proceeding and of respondent Kennecott Copper Corporation ("Kennecott").

2. On or about March 29, 1968, Kennecott acquired the business and substantially all of the assets of Peabody Coal Company ("Peabody").

3. At all times relevant to this proceeding, Kennecott and Peabody were engaged in commerce within the meaning of the Clayton Act.

4. For purposes of assessing the legality of the acquisition under Section 7 of the amended Clayton Act, the appropriate line of commerce is the production and sale of coal.

5. The relevant geographic market within which to test the competitive effect of the acquisition is the United States as a whole.

6. Prior to its acquisition of Peabody, Kennecott had already acquired the Knight-Ideal Coal Co. and was a potential entrant in a more substantial way into the coal industry.

7. Section 7 of the amended Clayton Act prohibits any merger or corporate acquisition where the effect in any line of commerce in any section of the country may be substantially to lessen competition or tend to create a monopoly.

8. The effect of the acquisition of Peabody by Kennecott may substantially lessen competition in the production and sale of coal in the United States in violation of Section 7 of the amended Clayton Act.

9. Total divestiture of the acquired assets is both necessary and appropriate to remedy the probable anticompetitive effects of the unlawful acquisition.

FINAL ORDER

I

It is ordered, That Kennecott Copper Corporation, a corporation, and its officers, directors, agents, representatives, employees, sub-

sidiaries, affiliates, successors and assigns, within six (6) months from the date of service upon it of this order, shall divest, absolutely and in good faith, subject to the approval of the Federal Trade Commission, all assets, properties, rights and privileges, tangible and intangible, including, but not limited to, all plants, equipment, trade names, trademarks and good will, acquired by Kennecott Copper Corporation, as a result of the acquisition of the assets and business of Peabody Coal Company, together with all additions and improvements thereto of whatever description, so as to restore Peabody as a going concern and effective competitor in the mining, production and sale of coal.

II

It is further ordered, That none of the assets, properties, rights or privileges, described in Paragraph I of this order, shall be sold or transferred, directly or indirectly, to any person who is at the time of the divestiture an officer, director, employee, or agent of or unde the control or direction of, respondent or any of respondent's subsidiary or affiliated corporations, or owns or controls, directly or indirectly, more than one (1) percent of the outstanding shares of common stock of Kennecott Copper Corporation, or to any purchaser who is not approved in Advance by the Federal Trade Commission.

III

It is further ordered, That if respondent divests the assets, properties, rights and privileges, described in Paragraph I of this order, to a new corporation or corporations, the stock of each of which is wholly owned by Kennecott Copper Corporation, and if respondent then distributes all of the stock in said corporation or corporations to the stockholders of Kennecott Copper Corporation, in proportion to their holdings of Kennecott Copper Corporation's stock, then Paragraph II of this order shall be inapplicable, and the following Paragraphs IV and V shall take force and effect in its stead.

IV

It is further ordered, That no person who is an officer, director or executive employee at Kennecott Copper Corporation, or who owns or controls, directly or indirectly, more than one (1) percent of the stock of Kennecott Copper Corporation, shall be an officer, director or executive employee of any new corporation or corporations described in Paragraph III, or shall own or control, directly or indirectly, more than one (1) percent of the stock of any new corporation or corporations described in Paragraph III.

V

It is further ordered, That any person who must sell or dispose of a stock interest in Kennecott Copper Corporation, or the new corporation or corporations, described in Paragraph III of this order may do so within six (6) months after the date on which distribution of the stock of the said corporation or corporations is made to stockholders of Kennecott Copper Corporation.

VI

It is further ordered, That pending divestiture, respondent shall not make any changes in the corporate structure, business operations, or in any plants, machinery, buildings, equipment or other property of whatever description of Peabody Coal Company other than those changes made in the ordinary course of business.

VII

It is further ordered, That respondent shall for a period of ten (10) years from the date of service of this order, cease and desist from acquiring, directly or indirectly, through subsidiaries or otherwise, without the prior approval of the Federal Trade Commission, all or any part of the share capital of any corporation engaged in the mining, production or sale of coal in the United States, or capital assets pertaining to such mining, production or sale of coal.

VIII

It is further ordered, That as used in this order, the word "person" shall include all members of the immediate family of the individual specified and shall include corporations, partnerships, associations and other legal entities as well as natural persons.

IX

It is further ordered, That respondent shall periodically, within sixty (60) days from the date of service of this order and every sixty (60) days thereafter until divestiture is effected, submit to the Federal Trade Commission a detailed written report of its actions, plans, and progress, in complying with the provisions of this order, and fulfilling its objectives.

X

It is further ordered, That respondent's request for continued *in camera* treatment of documents identified as CX 163, CX 164 A–H, and CX 154 V–Z7 be, and it hereby is, granted.

XI

It is further ordered, That the documents identified as CX 11, CX 124 A–N, CX 125 A–C, CX 196 A–H, and RX 186 be, and they hereby are, a part of the public record.

XII

It is further ordered, That respondent's requests for reconsideration of its motion of December 31, 1968, that Commissioner Jones withdraw from participation in this proceeding, or, in the alternative, that the Commission determine that Commissioner Jones be disqualified from such participation be, and it hereby is, denied.

IN THE MATTER OF

TOWN TALK COAT CO., INC., ET AL.

CONSENT ORDER, ETC., IN REGARD TO THE ALLEGED VIOLATION OF THE FEDERAL TRADE COMMISSION AND THE FLAMMABLE FABRICS ACTS

Docket C–1910. Complaint, May 5, 1971—Decision, May 5, 1971

Consent order requiring a New York City manufacturer and distributor of wearing apparel, including ladies' coats, to cease violating the Flammable Fabrics Act by importing and selling any fabric which fails to conform to the standards of said Act.

COMPLAINT

Pursuant to the provisions of the Federal Trade Commission Act and the Flammable Fabrics Act, as amended, and by virtue of the authority vested in it by said Acts, the Federal Trade Commission having reason to believe that Town Talk Coat Co., Inc., a corporation, and Gerald Becker, individually and as an officer of said corporation, hereinafter referred to as respondents, have violated the provisions of said Acts, and the Rules and Regulations promulgated under the Flammable Fabrics Act, as amended, and it appearing to the Commission that a proceeding by it in respect thereof would be in the public interest, hereby issues its complaint, stating its charges in that respect as follows:

PARAGRAPH 1. Respondent Town Talk Coat Co., Inc., is a corporation organized, existing and doing business under and by virtue of the laws of the State of New York. Respondent Gerald Becker