

The Texas—Northeast Connection: The Rise of the Post-World War II Gas Pipeline Industry

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Houston is popularly known as the capital of the oil industry. Few people realize, though, that beginning with World War II and continuing through the present, Houston has become the hub of the interstate gas pipeline industry. It is now home to the corporate headquarters of the nation's largest natural gas pipelines, many of which are part of large Houston-based diversified energy companies. These include Enron Corporation, Panhandle Eastern Corporation, Tenneco, Inc., Transco Energy Company, and the Coastal Corporation.¹

Three large pipeline companies now headquartered in Houston, Tennessee Gas Transmission Corporation (Tenneco, Inc.), Texas Eastern Transmission Corporation, and Transcontinental Gas Pipeline Company (Transco Energy Company), were formed between 1940 and 1950.² From the early 1940s through the mid-1950s, a number of different groups vied for the chance to expand the natural gas industry into eastern areas of the United States. New companies formed and competed for pipelines and the right to sell to large northeastern utilities in a series of dramatic episodes marked by political controversy. Tennessee Gas, Texas Eastern, and Transcontinental emerged as winners from these battles, while the interstate natural gas industry expanded in a frenzy of pipeline construction.

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¹Panhandle Eastern acquired another large Houston-based pipeline company, Texas Eastern Corporation, in 1989.

²Although these companies were not originally formed in Houston, each moved either their headquarters or important parts of their operations to the city by the early 1950s.

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By the beginning of World War II, most large metropolitan areas of the United States except for those in the Northeast had access to natural gas, either from local production or pipeline. An earlier episode of industry expansion left the Northeast without natural gas. During the 1920s, the pipeline industry had expanded rapidly after advancements in pipeline welding techniques enabled construction of long-distance pipelines; before 1925 no pipelines were longer than 250 miles. However, the Great Depression halted the growth of the pipeline industry before any pipelines could directly connect the southwestern natural gas fields with the Northeast. Cities such as Philadelphia, New York, and Boston were dependent upon manufactured gas, a gas produced from the distillation of coal and petroleum which was less efficient than natural gas. The coal industry, which supplied the raw product for manufactured gas, and the railroad industry, which transported the coal, adamantly opposed and attempted to halt the introduction of natural gas into their traditional northeastern markets.³

World War II spawned renewed growth in the natural gas industry. Appalachian factories required record quantities of gas and its by-products for the manufacture of vital steel, aluminum, high-octane gasoline, synthetic rubber, chemicals, and explosives, as well as for industrial and domestic heat processes and power generation.⁴ The surge in wartime energy demand combined with government interest in financing energy systems stimulated entrepreneurial interest in taking advantage of government support and organizing pipelines to transport fuel to the vital war production and refining centers.

In 1940, several businessmen knowledgeable of the gas industry sensed that the time was right to promote a pipeline extending from Appalachia to the Southwest. Curtis B. Dall led a group in a significant attempt to build such a line. Dall, best known for his failed marriage to President Franklin D. Roosevelt's daughter, Anna, saw the wartime gas industry as a ripe entrepreneurial opportunity. After visiting Nashville, Tennessee, in connection with a business deal involving phosphate properties, Dall "ran into a project which greatly interested me. Some friends described how nice it would be. . ." to have natural gas in the Nashville area.⁵ Subsequently, Dall and several others formed the Tennessee Gas and Transmission Company, Inc., on April 1, 1940.⁶

³Arlon R. Tussing and Connie C. Barlow, *The Natural Gas Industry: Evolution, Structure, and Economics* (Cambridge, Mass., 1984), 25-40.

⁴John W. Frey and H. Chandler Ide, *A History of the Petroleum Administration for War, 1941-1945* (Washington, 1946), 227.

⁵Curtis B. Dall, *FDR: My Exploited Father-In-Law* (Tulsa, 1967), 123.

⁶In 1946, the company's name changed to Tennessee Gas Transmission Company.

Tennessee Gas faced several obstacles before it could build and operate a pipeline. First, the new company required a Certificate of Public Convenience and Necessity from the Federal Power Commission (FPC) in order to operate. To acquire a certificate, a company had to prove in public hearings before the FPC that it had adequate financing, gas supply, and gas markets, and the engineering skill to construct a line. Tennessee Gas had initial difficulty obtaining financing and gas supply. But after the outbreak of war, the War Production Board (WPB) further hindered Tennessee Gas's plans by imposing strict limitations on steel usage; a pipeline required vast amounts of steel. Dall therefore lobbied for a national defense project designation. He also began negotiating with the Reconstruction Finance Corporation (RFC), which had been headed by Jesse Jones of Houston since 1933, for financial assistance from the federal government.

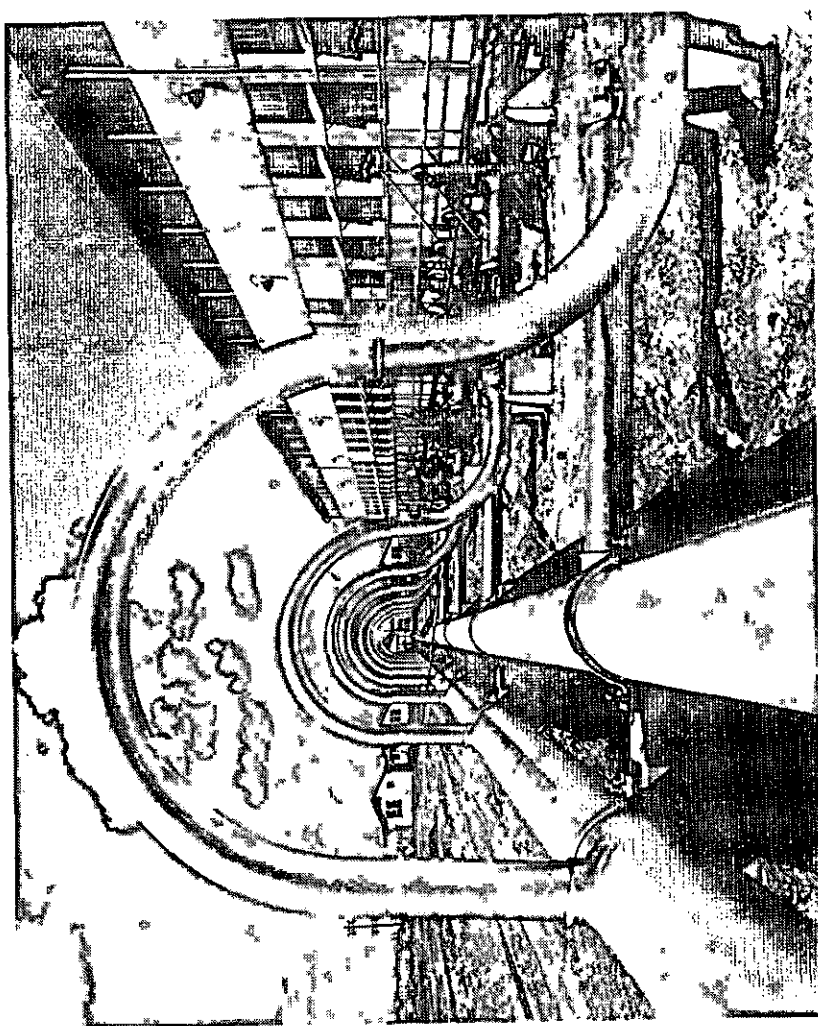
The FPC conducted hearings on the Tennessee Gas application at various times during 1942 and 1943. During the hearings, the FPC stated that: "It is crystal clear that additional natural gas is needed in the Appalachian region. It follows, therefore, that a realistic view of this situation definitely shows that the public convenience and necessity will be served by the construction and operation of the applicant's pipe line into the area if the additional showing hereinafter referred to is made."⁷ Tennessee's application nonetheless remained in serious trouble. While the FPC now actively supported a new pipeline to connect southwestern reserves with Appalachian customers, Tennessee had remained unable to arrange for either financing or gas supply for its line. On July 25, 1943, the FPC allowed Tennessee Gas sixty days to remedy these deficiencies.

Tennessee Gas also faced stiff competition from Hope Natural Gas, an Appalachian gas company subsidiary of Standard Oil of New Jersey. Hope proposed to build a line from the proven Texas Panhandle fields to meet its gas distribution system in West Virginia. Tennessee's promoters intensified their search for gas supply and financing. They discovered that a Chicago-based investment trust, The Chicago Corporation, owned very large quantities of natural gas on the Texas Gulf Coast near Corpus Christi.⁸ In return for access to these reserves, Tennessee Gas would extend its line southward to originate in the Chicago Corporation's gas fields.

Tennessee Gas still lacked adequate financial backing to pay for the pipeline construction. All previous negotiations with the government and with private industry had proven unproductive. Tennessee Gas officials now discussed financing plans with The Chicago Corporation, which had a

⁷Federal Power Commission, *Reports: Opinion and Decisions of the Federal Power Commission*, Vol. 3 (Washington, 1944), 446.

⁸The Chicago Company had been active in the Chicago gas business, first manufactured and then natural gas, since 1849.



Tennessee Gas transmission station in East Bernard, Texas, in 1944.

strong interest in seeing its natural gas supplies on the Texas Gulf Coast sold through the Tennessee Gas system. The Chicago Corporation offered to refinance Tennessee Gas under fairly generous terms, but it required complete control of the company in return. Tennessee Gas's current board reluctantly sold their company to The Chicago Corporation and resigned. The FPC, satisfied with the financial and operating integrity of the company, now issued it a certificate.⁹

The Chicago Corporation nominated a new set of officers and directors for Tennessee Gas and soon moved their headquarters to Houston.¹⁰ Principal among the new managers was Gardiner Symonds, a vice president in charge of oil and gas operations for The Chicago Corporation. Symonds's aggressive management style and competitive spirit characterized him as one of the gas industry's foremost entrepreneurs. As the first president of the reorganized pipeline company, he was responsible for assembling a staff to plan the construction of the pipeline. Soon thereafter, the RFC loaned the new company \$44 million to build the pipeline.¹¹

The effort to finance and construct the pipeline was an impressive display of wartime business-government cooperation. With federal approval to build the line, financing in place, and general industry approval, construction began. On October 1, 1943, the company established its first payroll. A small number of employees later swelled to between 9,000 and 11,000 workers during peak construction periods. Tennessee Gas hired several construction firms to work on the pipeline. The primary contractor, Bechtel-Dempsey-Price, shared the work with the Williams Brothers Corporation and Houston-based Brown and Root. The company broke ground for the pipeline on December 4, 1943, at the Cumberland River in Tennessee. Workers welded the first mainline pipe on January 10, 1944, but severe winter weather conditions prevented rapid progress. By May 1, 1944, only 76 miles of the pipeline had been constructed as rain, rough terrain, and material shortages slowed progress. As the weather improved with the coming of summer, the pipeline moved forward. After laying 1,200 miles of pipe, securing right-of-way from thousands of landowners, crossing sixty-seven rivers and hundreds of roads, and building seven compressor stations, Tennessee Gas began delivering fuel through the pipeline on October 31, 1944.¹²

⁹Reports: *Opinion and Decisions of the Federal Power Commission*, Vol. 3, 574.

¹⁰The new board of directors included Clyde H. Alexander, Arthur D. Chilgren, Ray C. Fish, Charles F. Glore, Paul Kayser, Gardiner Symonds, and Richard Wagner.

¹¹Marshall McNeil, "Lessee of Big Inch Pipe Lines is War Baby of Curious History," *Washington Daily News*, December 9, 1946.

¹²Frank H. Love, "Construction Features of the Tennessee Gas and Transmission Company Pipe Line," *The Petroleum Engineer* 16 (November 1944): 121-144. Also see Tenneco, Inc., "Tenneco's First 35 Years" (1978).

Tennessee's primary gas market area was the Appalachian region. By the end of 1945, its first full year of operation, Tennessee had delivered 73.5 billion cubic feet of gas into Appalachia. Tennessee Gas began operations with five Appalachian area distribution company customers which had a combined customer base of 750 Appalachian area communities.¹³ The pipeline continued to function effectively and expanded its system capacity to meet the increasing Appalachian demand. As the first pipeline to sell Gulf Coast gas into Appalachia, Tennessee Gas appeared to be in the best position to expand sales farther into the Northeast. But two other pipelines, built during the war, offered other entrepreneurs a chance to compete with Tennessee Gas for the eastern markets.

Soon after the outbreak of war in Europe, Secretary of the Interior Harold L. Ickes had suggested to President Franklin D. Roosevelt that the existing U.S. petroleum transportation network, consisting in part of petroleum shipments by oil tanker from the Gulf Coast to the New York harbor area, was vulnerable to enemy attack. Ickes proposed that the government construct an alternative overland pipeline network, from Texas to New York, to ensure a safe petroleum supply for the Northeast and the Allied war effort.¹⁴ Ickes's pipeline plan received little support until after the nation's formal entrance into the war, when German U-boats began sinking American oil tankers sailing along the Atlantic coast towards New York—at an average rate of three each day during some months. Daily deliveries of oil to the Northeast fell by 95%, sparking an immediate shortage and an imminent crisis.¹⁵

Subsequently, business and government cooperated to build the Big Inch and Little Big Inch pipelines, the longest petroleum pipelines ever constructed. The 24-inch diameter Big Inch extended 1,254 miles from the East Texas oil fields at Longview, Texas, to Phoenixville, Pennsylvania, with extensions to points near New York City and Philadelphia. The 20-inch diameter Little Big Inch originated in the refinery triangle area of Port Arthur and Houston and extended to Linden, New Jersey. The Big Inch carried crude while the Little Big Inch transported refined petroleum. Private oil companies originally intended to finance the Inch Lines, but the effort proved too expensive. Instead, the RFC provided financing for the two lines at an ultimate cost to the government of approximately \$146 million.¹⁶

¹³Tennessee Gas and Transmission Company, *Annual Report* (1945), 2.

¹⁴War Emergency Pipelines, Inc., "Fuel for the Fighting Fronts . . . VIA 'Big Inch' and 'Little Big Inch'" (War Assets Administration publication, n.d.), 4.

¹⁵U.S. Congress, Special Committee Investigating Petroleum Resources, *Hearings—War Emergency Pipe-Line Systems and Other Petroleum Facilities*, 79th Cong., 1st. Sess. (Washington, November 15-17, 1945), 21.

¹⁶Arthur M. Johnson, *Petroleum Pipelines and Public Policy, 1906-1959* (Cambridge, Mass., 1967), 307-327.

Together, the Inch Lines delivered more than 350 million barrels of crude and refined products during the war. In evaluating the contribution of the Inch Lines to the war effort, one petroleum pipeline historian wrote, "it would be difficult to measure what the availability of this amount of petroleum and petroleum products meant to the war effort, both overseas and at home. But clearly it was a major contribution."¹⁷

The postwar fate of the Inch Lines, the only pipelines which directly connected the Texas oil and gas region with the Philadelphia and New York City areas, quickly became the focus of a "classic clash of interest groups."¹⁸ Their wartime operation had ceased in late 1945, and oil shipment by tanker, a less expensive method than pipeline transmission, resumed. Large oil companies argued that the Inch Lines would duplicate peacetime petroleum transportation systems and should be converted to natural gas. Few industry representatives believed that the lines could successfully continue to carry petroleum products. However, the coal and railroad industries uniformly objected to the possibility of converting the Inch Lines to natural gas carriers. They believed that the introduction of natural gas into the Northeast would displace the sale of both coal and manufactured gas and generally disrupt the coal industry. Railroad companies which transported coal for the coal companies likewise feared that a drop in coal demand due to the introduction of natural gas into the Northeast would disrupt the railroads as well.¹⁹

As the owner of the lines, it fell to the federal government to resolve their future use. The Surplus Property Act of 1944 required the Surplus Property Administration (SPA) to determine the best disposal policy for all war surplus property, including the Inch Lines. In order to make its own recommendation as to their disposition, the RFC hired the engineering firm of Ford, Bacon & Davis, Inc., to study the options for the Inch Lines' postwar use. The firm's report, issued on August 15, 1945, advised that both Inch Lines should be converted to natural gas transmission. At the same time, Senator Joseph C. O'Mahoney (Wyoming) prepared a series of special hearings to consider how to dispose of the government's vast array of war surplus petroleum property. The hearings lasted for three days, from November 15 to 17, 1945, and they provided a forum for representatives of competing industries and interests to speak publicly about the disposition of the Inch Lines.²⁰

In early January, 1946, the SPA issued its disposal policy covering the

¹⁷Johnson, 326.

¹⁸*Ibid.*, 345.

¹⁹*Ibid.*, 343-345.

²⁰*Hearings—War Emergency Pipe-Line Systems and Other Petroleum Facilities*, 3. See also Jesse H. Jones, *Fifty Billion Dollars: My Thirteen Years with the RFC* (New York, 1951), 402.

Inch Lines. In what was known as the Symington Report after SPA Administrator Stuart Symington, the SPA recommended that first preference be given to continuing the Big and Little Big Inch in petroleum service, thereby assuring availability of the lines in the event of a national emergency.²¹ The disposal policy stated that special attention would be paid to offers which would give the many small and independent petroleum operators the opportunity of participating in both the use and acquisition of this facility in whole or in part.²² Although it indicated that a sale for natural gas transportation would be considered if a satisfactory sale of the lines for petroleum shipments could not be made, the SPA report was discouraging to potential bidders who wanted to convert the lines to natural gas.

On June 7, 1946, the War Assets Administration (WAA), the federal agency in charge of selling war surplus property, announced an auction for the Inch Lines. All bids would be due by July 30; they would be opened and read the following day. The WAA advertised the Inch Lines for sale or lease in thirty-eight newspapers and five oil trade journals. A number of groups immediately began preparation for the auction, and the WAA received sixteen valid bids by the closing date of July 30. In a public hearing on July 31, WAA personnel read out loud each of the bids. Of the bids submitted, seven proposed oil transportation, three were for gas, five proposed some combination of oil and/or gas use, and one did not state a preference. The process of determining the winning entry proved to be more difficult than expected. The WAA had imposed no standards on the format for the bids, and this situation posed serious problems, particularly in evaluating the financing of each bid; it was impossible to compare the bids in terms of their dollar values. While most of the bidders offered some cash for the pipelines, they proposed that the remaining cost would be covered by various forms of debentures, payments based upon gas sold, or other arrangements. In addition, the highest up-front cash amounts for the Inch Lines came from companies proposing to use the Inch Lines to transport natural gas.²³

A few days after the WAA received the bids for the Inch Lines, it announced its priority in analyzing types of bids based upon the Symington Report's recommendations.²⁴ The order of preference of consideration was: (1) oil, (2) oil and gas combinations, (3) gas, and (4) any other uses. In addition, the WAA stated that bidders would be expected to produce substantiating data to their bids as the bids were being analyzed. One week

²¹War Assets Administration, *Government-Owned Pipe Lines: Report of the War Assets Administration to the Congress* (Washington, 1946), 4.

²²*Ibid.*

²³War Assets Administration, *Transcript of Proceedings: Proposals to Buy or Lease the Big and Little Big Inch Pipe Lines* (Washington, 1946).

²⁴War Assets Administration, Press Release, August 2, 1946.

later, the WAA notified each bidder to submit substantiating data by September 9, 1946, a date later extended to September 16. The WAA continued to request additional information from bidders without coming close to reaching a decision.

Indicating the intensely political nature of the bid for the Inch Lines, almost all of the bidding companies included high profile former (or even current) political figures. Many powerful men had aligned themselves with various groups of investors looking to acquire the lines. Washington insiders lobbied for the various groups, and the lobbying reached a fever pitch. One bidder, Big Inch Gas Transmission Company, included a former Ohio Senator, an ex-justice of the Supreme Court, and an ex-chairman of the Maritime Commission. Attorneys for this company were listed as former Roosevelt aide Thomas Corcoran, a former general counsel for the FPC, and a former FPC Commissioner. Another bidder, American Public Utilities, included a most distinguished pair of Washington lawyers: former trust-buster Thurman Arnold and Abe Fortas, one-time Undersecretary of the Interior for Harold Ickes. Maverick oilman Glenn H. McCarthy had also submitted a bid.²⁵

Another prominent bidder, E. Holley Poe, headed a group of influential business and political figures. Poe himself was a natural gas consultant who had worked in the natural gas and natural gasoline department of the Petroleum Administration for War. The group he helped organize included Reginald Hargrove, second in command at United Gas Corporation; Everette DeGolyer, a Dallas-based and internationally known oil and gas geophysicist; and Charles I. Francis, an oil and gas attorney with the Houston law firm Vinson, Elkins, Weems, and Francis and also a Washington lobbyist. When the group heard a rumor that a rival group of Houston businessmen, including Jesse Jones, George and Herman Brown, George Butler, and Gus Wortham, planned to bid on the lines, Francis asked his law associate, Judge Elkins, to find out whether the rumor was true.²⁶ Elkins, Jones, the Browns, Butler, and Wortham were all part of the "8-F Group" which met in room 8-F of the Lamar Hotel and, between them, controlled much of Houston's business dealings. Whether or not the rumor was true, the result of Francis's inquiry was that George and Herman Brown joined the Poe group. George Butler and Gus Wortham both became peripherally involved in the group's efforts.

The Browns were a particularly important addition to the group. Their construction firm, Brown & Root, had built about 600 naval ships during

²⁵Washington *Daily News*, October 17, 1946.

²⁶Christopher J. Castaneda and Joseph A. Pratt, *From Texas to the East: A Strategic History of Texas Eastern Corporation* (unpublished working draft), 20-21.



E. Holley Poe of Texas Eastern (top left), Curtis Dall of Tennessee Gas (top right), and George and Herman Brown.

the war, among other projects, and participated in the construction of the Tennessee Gas pipelines.²⁷ After the war, Brown & Root needed new projects to utilize its enormous engineering and construction capability. Early in 1946, the firm announced the creation of a new petroleum and chemical division at its Green's Bayou facilities focusing on the design and engineering of gas compressors, pipelines, and related projects. Thus, George and Herman Brown's decision to join the Poe group grew out of their firm's need for new projects as well as its experience in the industry. In addition to their connections with Jesse Jones, the Browns were also close to then-Senator Lyndon Johnson. Francis later reported that he solicited Johnson's aid for his group's bid, but Johnson declined to assist the group.²⁸

While the various groups attempted to promote their bids, both overtly and covertly, Harold Ickes involved himself in the growing debate over the Inch Lines. Now the writer of a syndicated column, "Man to Man," Ickes took a journalistic shot at the Poe group. In an article titled "'Uncle Jesse's' Bid for Oil Pipelines Seen Loaded Two Ways for Monopoly," Ickes suggested that Jesse Jones, now back in Houston and serving as chairman of the National Bank of Commerce, was behind the "so-called E. Holley Poe bid" for the pipelines. Ickes warned that, "if the story is true, the War Assets Administration had better do some keen sniffing because Uncle Jesse has no peer among horse traders that I have known." Ickes was certain that George Butler, a Houston lawyer, "husband of Jesse's only heir and custodian of many of Jesse's enterprises, both business and political, is one of the E. Holley Poe crowd." After raising serious doubts about the propriety of Jones's involvement in the group—after all, Jones had personally overseen and supported the government's efforts to finance the pipelines during the war—Ickes admitted that in general he liked Poe's bid.²⁹ Although there is no evidence that Jones ever had a direct interest in Poe's bid, his close business relationship with the Brown brothers and his ties to Butler and Francis evoked speculation as to his possible involvement with the company's history.

Ickes's article set off a flurry of denials from Poe, Francis, and Butler. Poe wrote to Ickes and met with him two days later, assuring him that Butler and Jones were in no way connected with the bid. Francis did the same, and Butler issued a statement denying that he was involved with any group interested in the Inch Lines. Ickes wrote to both Poe and Francis: ". . . I cannot see that the column did your group any harm. On the contrary, it

²⁷Dana Blankenhorn, "The Brown Brothers: From Mules to Millions as Houston's Contracting and Energy Giants," *Houston Business Journal* (March 19, 1979), 1-4.

²⁸Ronnie Dugger, *The Politician: The Life and Times of Lyndon Johnson* (New York, 1982), 282.

²⁹Harold L. Ickes, "'Uncle Jesse's' Bid for Oil Pipelines Seen Loaded Two Ways for Monopoly," [Washington] *Evening Star*, October 2, 1946.

served notice on Jesse Jones that he was more or less suspect and he might be disposed to keep his hands off. That is really what I had in mind in writing the column."³⁰

Ickes soon followed his initial attack on the Poe group with other columns in which he wrote that the Inch Lines should be used to transport natural gas. He suggested that the consequent provision of natural gas to the Northeast would "end John L. Lewis' stranglehold on the economy of the United States."³¹ As president of the United Mine Workers, Lewis had ordered the nation's coal miners to strike during the war and consequently aggravated energy shortages in Appalachia and the Eastern Seaboard. At the time of Ickes's column, Lewis was again threatening to call a strike. The specter of future disruptions of energy supply by prolonged and often violent coal miners' strikes was a powerful incentive for government officials to reconsider their policy of favoring oil over natural gas in the sale of the Inch Lines.

With the first auction of the Inch Lines stalled by the difficulties of the financial evaluations required and by the growing political controversy over their sale, the federal government was ready to reconsider the recommendation that the pipelines remain in petroleum service. On November 19, the Select Committee of the House of Representatives to Investigate the Disposition of Surplus Property met to determine the best way to dispose of the Inch Lines once and for all. On the opening day of the hearings, Robert Littlejohn, Chairman of the WAA, cleared the air by announcing a decision to reject all previous bids for the Inch Lines. The interagency committee studying the disposal policy stated: ". . . it had become evident that the interest of national defense could be met regardless of whether the pipe lines be used for natural gas, petroleum and its products, or a combination thereof. . . the bids had been invited on a restricted basis, which precluded the government from securing the maximum net cash return."³² Since the highest cash bids had been those for converting the Inch Lines to natural gas, this statement suggested a giant step away from the policy called for by the Symington Report.

Meanwhile, John L. Lewis had declared the contract between the government and the United Mine Workers void on November 15. The resulting strike proved short-lived, but the publicity surrounding Lewis's actions and the increasingly severe energy crisis added to government worries about future energy shortages in Appalachia. Several bidders and Tennessee Gas discussed with the WAA their interest in temporarily leasing the Inch

³⁰Castaneda and Pratt, 31-32.

³¹Harold L. Ickes, "WAA Seen Yielding to Machinations of John L. Lewis on Natural Gas," [Washington] *Evening Star*, October 30, 1946.

³²*Government-Owned Pipe Lines*, 7.

Lines to alleviate the Appalachian fuel shortage. The other participants in the meeting included representatives of Big Inch Natural Gas Transmission Company, Big Inch Oil, Inc., and Transcontinental Gas Pipe Line Company.³³ On November 29, Tennessee Gas made a formal proposal to lease the Inch Lines on a temporary basis and deliver gas to Appalachia—but not farther eastward. In its letter to the Department of the Interior, Tennessee Gas described its ability to act promptly and disclosed its willingness to have the FPC direct the disposition of the natural gas it would transport.³⁴

On December 2, the WAA accepted Tennessee Gas's proposal and issued the company a Letter of Intent to operate the pipelines. Presumably, Tennessee Gas received the letter instead of the other interested companies because it was an operating gas company which could most quickly and efficiently put the Inch Lines into service. The lease began at 12:01 A.M. on December 3, 1946, and was to expire at midnight on April 30, 1947.³⁵ Tennessee Gas had stated that if its lease did not run until at least April, it would lose money on the project.

Tennessee Gas interconnected its system with the Inch Lines near Many, Louisiana, and began pumping gas into the Little Big Inch and the Big Inch on December 5 and December 9, respectively. By December 11, gas was flowing to consumers in Ohio. However, the company did not actually convert the pumping stations along the Inch Lines to transmit natural gas; instead, it simply operated them without compressor stations by using only the 140-pound pressure exerted by the natural gas emerging from the various connecting wells. Tennessee Gas's operation of the Inch Lines proved their viability for transporting natural gas and seemed to give that company an apparent edge in the next round of bidding for the Inch Lines.³⁶

Now convinced of the viability of using the Inch Lines for natural gas transmission, Littlejohn announced on December 27 that there would be a new auction. All bids were to be submitted to the WAA by February 8, 1947. The bids would be made on standardized forms for easy comparison, including a section requiring each bidder to detail its plans for the utilization of flare gas. To purchase the Inch Lines, the successful bidder would be required to make four payments over a nine-month period. The first payment of \$100,000 would accompany the actual bid as a deposit. A second payment of \$1,000,000 would follow the WAA's issuance of a Letter of Intent to sell the pipelines to the high bidder. The third payment of

³³Department of the Interior, Press Release, "Big Inch and Little Big Inch Conferences Held," November 30, 1946.

³⁴Tennessee Gas Transmission Company, *Annual Report* (1946), 9.

³⁵*Ibid.*

³⁶*Ibid.*

\$4,000,000 would be due on the day the bidder began operating the Inch Lines. The winner of the bid would make the final payment to the WAA within nine months of the date of the Letter of Intent.

At this point, the Poe group reorganized and officially incorporated as Texas Eastern Transmission Corporation. George Brown became chairman, E. Holley Poe was the new president, and Charles Francis was the general counsel. The group also designated August Belmont, then vice president of Dillon, Read, and Co., as their banker. Belmont became an important partner in the early financing of Texas Eastern. His name evoked the aura of large-scale venture capital. In the late nineteenth century, his great-grandfather, August Belmont, had been the American correspondent banker for the European Rothschilds. In order to raise the \$100,000 to be submitted with the bid, the new company issued 150,000 shares of stock at \$1 each. Twenty-eight people subscribed to the initial stock offering. George and Herman Brown each purchased 14.25 percent of the stock, and they lent \$67,500 to nine persons so that they could purchase stock for themselves. In return for the loans, the borrowers granted George Brown proxy for the voting rights of each of their shares for a period of two years.³⁷

On February 10, War Assets Administration representatives opened each of the bids in a public hearing; five were accepted and for various reasons the other five were considered void. The three highest bids received by the WAA were all for natural gas use. Texas Eastern Transmission Corporation had submitted the high bid of \$143,127,000, which was only two and a half million dollars less than the original construction cost of \$145 million. The second highest bid was only \$131 million, submitted by Claude A. Williams and Associates representing the Transcontinental Gas Pipe Line Company. Tennessee Gas and Transmission's bid came in third at \$123,700,000. The two other bids accepted by the WAA were from Big Inch Oil & Gas Corp. for \$108 million and from Big Inch Natural Gas Transmission Co. for \$121 million. The low bid was submitted by J. W. Crotty of Dallas. He had pasted a dollar bill on the bid form; \$.60 for the Big Inch and \$.40 for the Little Big Inch. Crotty noted that the enclosed funds were all his, and he would be the principal executive, or, in his words, "the whole cheese."³⁸

But winning the bid was only the first step in actually acquiring the Inch Lines. Texas Eastern now had to raise the purchase price of the Inch Lines and pay the government, and also acquire a certificate of public convenience and necessity from the Federal Power Commission. Numerous other technical and legal problems faced the new company as well, but it

³⁷Castaneda and Pratt, 43.

³⁸War Assets Administration, *Transcript of Proceedings: Proposals for Purchase of War Emergency Pipe Lines Commonly Known as Big and Little Big Inch Pipe Lines* (Washington, February 10, 1947).

succeeded in overcoming them all. On October 10, 1947, the FPC ordered that a certificate be granted to Texas Eastern. The company planned to finance its purchase by selling \$120,000,000 in bonds and approximately \$82,000,000 in stock priced at \$9.50 per share. The original purchasers of Texas Eastern's first 150,000 share issue could now reap a profit.³⁹

After the SEC unanimously approved Texas Eastern's stock issue, several newspapers reported the deal. Texas Eastern then suffered its first dose of negative publicity. One headline read, "Texas Eastern Transmission Stockholders Stand to Make \$9,825,000 for \$150,000 [investment]."⁴⁰ The controversy increased when one founding stockholder stated his intention to sell his original shares, which had cost him \$2,500, for \$166,250. The papers reported that twenty-eight individuals had purchased a \$143-million pipeline with only \$150,000 and reaped enormous profits at the same time. To minimize the bad press, August Belmont and C. Douglas Dillon held a series of press conferences to answer reporters' questions about the transaction. Belmont spent the rest of the week discussing the financing with reporters and editors from *Time*, *Newsweek*, the *New York Times*, and the newspaper *PM*. This highly public debate over high finance was later repeated with more subtlety in two opposing articles in the prestigious *Harvard Business Review*.⁴¹

The public controversy over intrigue, political entrepreneurship, and dramatic profits gradually blew over, leaving Texas Eastern to close its purchase of the Inch Lines on November 14, 1947. The company faced new challenges in the expanding natural gas industry. The FPC mandated that the company continue to sell natural gas to needy Appalachian gas customers. In addition, Texas Eastern began negotiations with utility companies in Philadelphia for natural gas sales. Within several years, that city's utilities had entirely eliminated manufactured gas from their system.⁴²

Texas Eastern's original headquarters were in Shreveport, Louisiana. Although George Brown, chairman of the Texas Eastern board, wanted Texas Eastern located in Houston, the new company's prized manager, Reginald Hargrove (formerly vice president of the United Gas Corporation and an original member of the Poe group) insisted on keeping the company in Shreveport during his tenure. Some of the company's operations were

³⁹Castaneda and Pratt, 63.

⁴⁰"Texas Eastern Transmission Stockholders Stand to Make \$9,825,000 for \$150,000," *PM Daily* 8 (November 11, 1947).

⁴¹See John W. Welker, "Fair Profit?" *Harvard Business Review* 26 (March 1948): 207-215; Joseph Stagg Lawrence, "Profits and Progress," *Harvard Business Review* 26 (July 1948): 480-491.

⁴²Nicholas Wainwright, *History of the Philadelphia Electric Company* (Philadelphia, 1961), 319.

maintained in Houston, but after Hargrove's untimely death in an airplane accident in 1954, the company gradually began moving all operations to Houston.

Claude Williams, disappointed at having lost the bid for the Inch Lines, quickly renewed his efforts to sell gas to the New York City metropolitan area, the largest manufactured gas market in the United States. Williams had originally listed Austin as the home of his Transcontinental Gas Pipe Line Company, but he now planned to locate it in Houston. After a series of hearings lasting nine months, requiring 200 witnesses, filling 9,000 pages, and costing approximately \$500,000, the FPC granted Transcontinental a certificate to operate a pipeline in May 1948. Transcontinental broke ground for its line a year later in Laurel, Mississippi. The 1,840-mile line began delivering gas to its New York City customers in early 1951.⁴⁵ Transcontinental also began selling gas to the Philadelphia Electric Company, one of Texas Eastern's customers.⁴⁴

The conversion of the New York City area from manufactured gas to natural gas, in the early 1950s, marked the end of manufactured gas as a significant industry in the United States. Utilities mounted a tremendous labor-intensive effort to convert their customers' appliances to accept natural gas, and new customers were quickly added on to the system. And this enormous market belonged originally to Transcontinental. However, the entire New England area remained without access to natural gas. An intense competition between Tennessee Gas and Texas Eastern ensued. The press depicted the competition as a man-to-man duel between Reginald Hargrove of Texas Eastern and Gardiner Symonds of Tennessee.⁴⁵ One gas man said at the time, "in all my forty years in the gas business, I have never seen so much chess playing."⁴⁶ Tennessee Gas and Texas Eastern both created new subsidiaries to connect their existing lines with the New England markets, in August and September, 1949, respectively. Both applied for FPC certificates to construct lines and begin selling gas in New England.⁴⁷

The competition for certificates lasted for four years. Battles were fought

⁴⁴Howell and Hart, "The Promoting and Financing of Transcontinental Gas Pipe Line Corporation," *Journal of Finance* 6 (no. 3, September 1951): 315; Transcontinental Gas Pipe Line Corporation, *Annual Report* (1950), 1.

⁴⁵Wainwright, 320-321.

⁴⁶"Businessmen in the News, Principals in Battle for New England's Gas Market," *Fortune* (January 1953), 37.

⁴⁷"Natural Gas—Whoosh!" *Fortune* (December 1949), 204.

⁴⁸Texas Eastern Transmission Corporation, *Annual Report* (1949), 16; Texas Eastern Transmission Corporation, *Annual Report* (1951), 13. Tennessee Gas's subsidiary was the Northeastern Gas Transmission Company, and Texas Eastern's was the Algonquin Gas Transmission Company.

in both the regulatory arena and the courts. The FPC desired New England to have gas service from two pipelines, but Tennessee Gas and Texas Eastern both attempted to persuade the regulatory agency to certify only one line to service the region. After years of haggling, Symonds and Hargrove, tiring of the costly delays, moderated their initial positions. Appearing before the Commission in March 1953, Symonds testified that even if his company's subsidiary, Northeastern Gas Transmission Company, received the entire New England market, it would buy gas from both his company, Tennessee Gas, and its rival, Hargrove's Texas Eastern.⁴⁸ The proposed settlement subsequently agreed to by all parties largely reaffirmed the FPC's initial position on the matter. On August 6, 1953, the FPC granted certificates to both subsidiaries. Natural gas was finally available throughout the Northeast.

In only a decade, natural gas pipelines had been extended to the immense markets of Appalachia, the Eastern Seaboard, and New England. This dramatic industry growth came about not through a gradual expansion of existing companies but through the formation of new companies relying on the political savvy and business expertise of their principals to succeed despite the huge initial capital outlay required. In the face of competitive battles and public controversies, these new companies grew and prospered. Houston's role as the regional center for interstate gas pipeline operations also developed. Tennessee Gas, Texas Eastern, Transcontinental, and other pipeline companies ultimately located their headquarters in Houston because the city was near the large Gulf Coast gas reserves from which they purchased their gas, and Houston was a growing commercial center for the regional energy industry. As the natural gas industry continued to expand in the following years, so did Houston's importance as the location for many of the nation's major pipeline companies. Houston and the natural gas industry matured together.

⁴⁸Texas Eastern Transmission Corporation, *Algonquin Calendar* (n.d.), 42.