

**HISTORY**

**OF**

**NORTHERN NATURAL GAS COMPANY**

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1930

Northern Natural Gas Company was organized in Wilmington, Delaware, on April 25, 1930. Three large holding companies, the United Light and Railway Company, Lone Star Gas Corporation, and North American Light and Power, provided the Company capital.

These companies controlled Northern through the ownership of all the common stock: North American and United Light, 35% each; and Lone Star, 30%. The three companies owned operating subsidiaries engaged in the manufactured gas business in the Midwest. Recognizing the potentialities of the Hugoton and Texas Panhandle natural gas fields, they wished to obtain this more desirable fuel for their own markets.

Meanwhile Missouri Valley Gas Company was making preliminary agreements for construction of a pipeline from Hugoton, Kansas, to the general vicinity of Omaha, Nebraska. It had bought right-of-way and had entered into contracts for pipe and laying of the line. Northern took over the project with all contractual obligations.

The Argus Pipe Line Company also was included in the deal. Argus had a line from Hugoton, Kansas, east to Dodge City and west to Elkhart. Argus Gas and Fuel Company, which Northern's owners also acquired, was a gas distributing company owned by Argus. It retailed gas in several southwest Kansas communities among which were Hugoton, Meade, Sublette, and Dodge City.

Northern's organizers entered into gas purchase contracts with Missouri Valley Gas Company and the Argus Production Company for Hugoton field gas and with Phillips Natural Gas Company for Texas Panhandle gas. Other property acquired shortly after Northern's organization included Texas gas leases covering approximately 33,000 acres.

Northern's initial board meeting was held in Chicago on May 5, 1930. Three of the eleven men attending this meeting were destined to reach the presidency of the Company. William Chamberlain was the first elected to the post. Later, L. E. Fischer succeeded Chamberlain and Frank Brooks succeeded Fischer. Other officers chosen at the outset included: Clement Studebaker, Jr., Chairman of the Board; L. B. Denning, Vice President; D. A. Hulcy, Secretary and Comptroller; and A. J. Berta, Treasurer.

The board authorized the original subscription of the proprietary companies for one million shares of \$10 stated value common stock. Plans were made to arrange from bank financing, which resulted in a \$17 million loan from a syndicate of institutions headed by the Harris Trust and Savings Bank of Chicago.

The Company then started building its line north of Clifton, Kansas. The first community attached to the pipeline was Beatrice, Nebraska, on September 9, 1930. Other cities to come on the system that year were Lincoln, Nebraska, and Council Bluffs, Iowa. System salable capacity in 1930 was 20 million cubic feet although peak day deliveries were only 8.4 million cubic feet.

The corporate structure of Northern was quite complex in 1930. Northern Natural Gas Company was the top holding company for a group of ten subsidiaries. Northern's main function in the setup was to procure the necessary capital, while the subsidiaries were formed to engage in the production, purchase, transmission, distribution and sale of natural gas. A list of the subsidiary companies and their functions follows:

Northern Fuel Supply Company - to gather natural gas and extract gasoline from natural gas.

Missouri Valley Pipeline Company - as a main line wholesale company.

The Argus Pipeline Company - gas transmission and distribution in Kansas.

The Garden City Gas Company - to distribute gas in Kansas.

Missouri Valley Pipe Line Company of Nebraska - gas transmission in Nebraska

Missouri Valley Pipe Line Company of Iowa - gas transmission in Iowa.

Interstate Production Company - to acquire leaseholds.

Peoples Natural Gas Company - to distribute gas in Nebraska communities.

Fairbury Gas & Electric Company - to distribute gas in Fairbury, Nebraska.

Iowa Gas Distributing Company - to secure franchises and distribute gas in ten central Iowa communities.

## 1931

The year 1931 was a big one in the pages of Northern's history. During that year approximately 1,150 miles of line were added to the system. Among some of the expansion that took place in 1931 was a

24-inch line from Plattsmouth, Nebraska, northeast to Ogden, Iowa, and from that point a 20-inch line was built northward to Ventura, Iowa. From Ventura a 16-inch line was laid to the Owatonna, Minnesota area. In addition, a line was built north via South Sioux City, Nebraska, to Sioux Falls, South Dakota.

Expansion of Northern's system to Minnesota was quite an important event as this was the first time natural gas had reached that state. Alden was the first town in the state to be served.

Natural gas was brought to 70 communities in several states during 1931, bringing the total to 114, including Fremont, Nebraska; Fort Dodge, Mason City and Des Moines, Iowa.

Two more subsidiaries were organized in 1931, the Minnesota Northern Natural Gas Company and the Northern Gas Engineering Company.

Minnesota Northern Natural Gas Company was organized by Northern interests on June 27, 1931, and originally owned both the main transmission line and distribution systems of the group within the state. Northern Gas Engineering Company was formed on June 13, 1931, as a construction unit which subcontracted most of the projects assigned to it by affiliated companies within the group.

### 1932

In 1932 Northern more than doubled its system capacity from 52 million cubic feet to 1931 to 114 million.

Common stock was changed from 2,000,000 shares at \$10 stated value to 200,000 shares at \$100 stated value.

The Company's corporate structure underwent extensive simplification. Missouri Valley Pipe Line Company of Iowa, Iowa Gas Distributing Company, Fairbury Gas and Electric Company, and Northern Gas Engineering Company were dissolved. Properties of Iowa Gas and Fairbury Gas were transferred to Peoples Natural Gas Company.

Sioux City, Iowa, and Rochester, Minnesota, were the two largest cities to come on the line in 1932. One of the first users of natural gas in the Rochester area was the famed Mayo Clinic. Many large industries also were added to Northern's system during 1932.

### 1933

In September 1933, L. E. Fischer became President of Northern and F. H. Brooks became Vice President. Northern's pipeline system

continued its rapid expansion northward with a line from Owatonna, Minnesota , to Inver Grove, Minnesota, just south of the Twin City area.

#### 1934

In 1934 the corporate structure of the Company was further simplified when Northern Gas and Pipe Line Company was merged with Northern Natural. This company had served as a main line wholesale company and had been named the Missouri Valley Pipe Line Company until September 21, 1931.

The first for several Company-sponsored employee benefits was established in September of this year when a group life insurance plan was worked out with Northwestern National Insurance Company. This plan and the others that followed have been continually improved and expanded through the years until they now compare with the best in the industry.

#### 1935

The Beatrice and Mullinville compressor plants were constructed in 1935, bringing the total horsepower of the system to 28,350. In 1935 the largest community to initiate gas service from Northern's system was Vermillion, South Dakota.

#### 1936

On June 16, 1936, F. H. Brooks became President of Northern and John Merriam became Assistant to the President, Assistant Treasurer, and Assistant Secretary.

On December 7, 1936, the Missouri Valley Pipe Line Company of Nebraska was dissolved with its assets going to Northern Natural. That same year one of Northern's subsidiaries, Interstate Production Company, acquired 60,000 acres of leases in the Kansas portion of the Hugoton field. This was the first acreage leased by the Company in this area and boosted reserves to 1.7 trillion feet.

The Omaha office was moved from the City National Bank Building to the Aquila Court Building in the fall of 1936.

1937

On February 20, 1937, the Interstate Production Company and Northern Fuel Supply, both subsidiaries, were merged with Northern. At year end, salable capacity was 174 million cubic feet; and, coincidentally, 174 towns were being served.

1938

The Company's first retirement income plan became effective September 1, 1938.

On December 31, 1938, the assets of the Argus Pipe Line Company were conveyed to the Garden City Gas Company, and the Argus company was then dissolved. The name of the Garden City Gas Company was changed to Argus Natural Gas Company, Inc. On the same day, the assets of Minnesota Northern Natural Gas Company were conveyed to Peoples Natural Gas Company.

1939

On January 1, 1939, Burt Bay became President of Northern Natural. He replaced Frank H. Brooks, who had reached retirement age. John Merriam was made Secretary and Treasurer while still retaining his position as Assistant to the President.

One of the main phases of the 1939 construction program was the building of a 16-inch line from South Sioux City through the sites of the Paullina and Welcome compressor plants to a point just south of the Twin City area in Minnesota. This line covered approximately 240 miles.

By the end of the year, 208 towns were receiving natural gas from Northern's system. Horsepower installed that year brought the cumulative total for the system to 43,250.

1940

Ames and Boone, Iowa were the two largest cities added to the system and by the end of 1940, 220 communities were on the line.

The group hospitalization plan for employees was inaugurated in 1940.

Northern continued to inch forward with the installation of 7,800 H.P. of compression facilities to bring the total to 51,050.

#### 1941

In 1941, common stock was split 5-1 to 1,015,000 shares with a \$20 par value.

United Light and Railways Company, one of the three owners of Northern, sold its interest (355,250 shares) to the public on September 10, 1941. This was done by order of the Securities and Exchange Commission under the integration provisions of the Holding Company Act. The stock was purchased by approximately 4,200 individual stockholders, making the first time any of the stock (traded over-the-counter) came into direct ownership by the general public.

#### 1942

In April, 1942 the War Production Board issued an order which prohibited the sale of natural gas for use in new space heating equipment and only under special circumstances permitted other new uses. War plants began to spring up in the Midwest and many of them turned to natural gas.

Lone Star was the second of Northern's holding companies to withdraw when they worked out a corporate simplification plan which was approved by the Securities and Exchange Commission. Lone Star distributed its 304,500 shares to its own stockholders on December 31, 1942, adding approximately 12,000 new stockholders to the 4,200 gained in the United Light stock disposition.

The first rate reduction by the Company since the passage of the Natural Gas Act in 1938 was put into effect in April, 1942. The annual reduction amounted to \$298,000.

#### 1943

In February, 1943, Northern again reduced its wholesale rates to distributing companies by \$2,087,000 a year.

Major construction in 1943 because of the war was limited to facilities designed to offset partially the declining gas supply in the Otis field. A loop line, 25 miles in length, was constructed south of Bushton.

At the end of 1943, the gas production department estimated reserves to be 2.7 trillion cubic feet.

1944

Natural gas in 1944 continued to help make bullets, shells, bombs, and B-29's and supplied fuel for the generation of electric power for many war plants.

1945

During this year Northern acquired the pipeline facilities of its subsidiary, Argus Natural Gas Company, Inc., and in March, 1945, the Securities and Exchange Commission approved the consolidation of Argus Natural Gas Company's distribution properties with Peoples Natural Gas Company.

Also during 1945, John Merriam was made a Director of the Company and advanced to Vice President and Treasurer.

The pent-up demand for natural gas, which was curbed during the war, began to show its effects. By early fall the rate of attachment of new customers reached such momentum that Northern undertook a hurried construction program of 51 miles of loop line. Work was started in late October and all but 11 miles were completed before severe weather halted construction. This increased the capacity to 276 million cubic feet daily.

Northern's stock went on the New York Curb, now called the American Stock Exchange.

1946

In 1946, Northern added 207 miles of loop line, increasing its daily capacity to 322 million cubic feet.

1947

In 1947 the Company increased its pipeline capacity to 403 million cubic feet per day, an increase of 45% since the end of the war. F.M. two-way radios, both mobile and fixed, were installed on the system for the first time. Load factor which is the maximum possible use of facilities, reached an all time high of 92% in

1947. Gas sales zoomed to 110,624,000,000 cubic feet, an increase of 19% over the previous year.

On June 19, 1947, Northern's stock was first listed on the New York Stock Exchange. In September, a 2-1 split of the common raised the number outstanding to 2,030,000 at \$10 par.

The last of the three holding companies which organized Northern stepped out of the picture in 1947 when North American sold its 710,500 shares of common stock at competitive bidding.

1948

On January 1, 1948, John Merriam was advanced from Vice President and Treasurer to Executive Vice President.

Meeting consumer demand continued to be the principal problem of the Company throughout 1948, although the expansion program carried out after the war relieved the demand to a considerable extent.

A plan of awarding pins and certificates, starting with the completion of the fifth year of continuous service of the employee, and at five year intervals thereafter, was inaugurated. Five hundred forty-three service pins and certificates were awarded to veteran Northern employees at the initial presentations.

Two significant contributions were made to efficiency of operation in this year. A full period talking, four-wire leased line service was installed, connecting the Omaha office and virtually all of the points on the system north and east of Omaha. The first Company-owned plan was purchased to facilitate construction, operation and maintenance work along the lines.

At the end of 1948, the Company, directly and indirectly, supplied natural gas fuel to a total of 560,000 consumers in 242 cities and towns having a combined population of 2,054,000. The city of St. Paul, Minnesota changed over from coke oven gas to straight natural gas this same year.

1949

During 1949, additional compressor and pipeline facilities increased Northern's system capacity to 489 million cubic feet of gas per day. Gas reserves for that year were estimated at 6 trillion cubic feet. Funds for the 1949 construction program were partially obtained from the offering on March 30 of the right to stockholders to subscribe to 406,000 shares of common stock, at one additional share for each five shares held, at a price of \$29.50 per share.

Remote control fire valves were installed for the first time at some of our compressor plants. A safety measure, the remote control fire valve system is designed to minimize danger from fire or explosion, and to provide the maximum in control, if fire or explosion should occur.

The other new device employed by the Company for the first time in 1949 was the use of radium rays for the testing of pipeline welds. The radium ray process is similar to that used in X-ray work.

#### 1950

In 1950, the Company carried out the largest construction program in its history, up to that time, when it increased its capacity to 612 million cubic feet. This program included 625 miles of main, loop, and gathering lines at a cost of \$52,000,000. B. R. Bay retired as President during 1950, and John Merriam moved up from Executive Vice President.

The Company filed for rate increase in March, 1950; October, 1950; and December, 1951.

Federal Power Commission issued an order on the first two rate applications in June, 1952, allowing \$5,100,000 of the \$10,000,000 requested. Northern appealed this order, along with certain issues in the third rate increase application, to the U. S. Court of Appeals for the 8th Circuit and was granted a stay order pending judicial review.

#### 1951

Pipeline capacity was increased to 674 million cubic feet daily in 1951. The cost of this expansion exceeded \$36,000,000. During the year, stand-by units were installed at eight compressor plants to facilitate engine overhaul and emergency repairs.

Considerable progress in the matter of gas supply was made by Northern in 1951. It increased gas reserves in the Hugoton field, actively stepped up its exploration program in other areas of potential gas supply, and conducted active negotiations for the purchase of natural gas in the Alberta gas fields in Canada, and from the Permian Basin gas fields of west Texas and eastern New Mexico.

At the end of 1951, the five scattered offices of Northern, in Omaha, were assembled under one roof in its new headquarters building at 2223 Dodge Street.

1952

Peoples Natural Gas Company was dissolved and the properties and business were transferred to Northern in May, 1952. Peoples is now a division of Northern.

Northern purchased 51 percent of Permian Basin Pipeline Company in August, 1952. Permian's reserves were estimated at 2.3 trillion cubic feet.

On October 31, 1952, Northern conveyed all of its gas leases and wells to a newly-created subsidiary, Northern Natural Gas Producing Company, concurrently securing the gas to be produced from such leases and wells to Northern by contracts at prevailing terms. FPC initiated an investigation of this action, but after hearings were held, the investigation was terminated.

In November, 1952, Northern purchased all of the capital stock of Independent Natural Gas Company. The assets of Independent consisted of a compressor plant and 21 miles of pipeline through which it transmitted gas from Phillips Petroleum Company to Northern in the Texas Panhandle field. Independent was officially dissolved in 1954.

During 1952, Northern purchased 100,000 shares of Husky Oil Company common stock. This amount represented about 4 percent interest in Husky. Northern also obtained first call on all gas which Husky had for sale except for that purchased by the government of Saskatchewan. The stock was sold in December, 1958, and January, 1959.

Pipeline capacity did not reach the proposed 825 million cubic feet per day in 1952 because of a further delay in receiving a satisfactory certificate from FPC. Late in the year a construction program yielded 20 million cubic feet daily. This coupled with 40 million obtained by departing from normal operating procedure and using stand-by compressor units pegged daily capacity at 734 million at year end 1952. Gas reserves stood at 6.7 trillion cubic feet.

1953

During 1953, Northern conducted the largest construction program in its history. The program brought pipeline capacity over the billion mark to 1007 mcf by the end of the year. Part of the capacity increase came from completion of the 825 million cubic feet daily program and the balance came from an entirely new source of supply, the Permian Basin area of west Texas and New Mexico. This supply was

made available to Northern through its then 84%-owned subsidiary, Permian Basin Pipeline Company, which had a lease-of-capacity arrangement with El Paso Natural Gas Company for transmitting the gas 200 miles northward from Plains, Texas, to the south end of Northern's pipeline system. This program permitted Northern to meet all of the capacity requests of its 263 communities. Three "first" highlighted the 1953 Northern-Permian construction program. The Company laid its first 30-inch pipe, built its first carbon dioxide removal plant, and installed its first gas turbine compressor units.

To meet the great demand for natural gas, 1953 not only set new construction records, but required more financing than any previous year. In May, 1953, Northern offered stockholders 548,100 additional shares, on the basis of one share for each five held. The offering brought outstanding shares of common stock to 3,288,600. It was followed by \$40,000,000 issue debentures. In September, for the first time in the Company's history, 250,000 shares of \$100 par value 5 1/2% Cumulative Preferred Stock were issued, and in November a \$25,000,000 issue of debentures was sold.

On June 29, 1953, Northern filed a rate increase application with FPC for about \$12,000,000 annually. A settlement of this application approved by the Commission on January 7, 1954, permitted Northern to put into effect as of December 27, 1953, rates to provide additional revenues of approximately \$6,000,000 annually over the level requested in Northern's previous rate increase filings, certain issues of which had been appealed to the U. S. Supreme Court.

Proven reserves controlled by Northern increased to 9.1 trillion cubic feet at the end of 1953, and the Company's producing subsidiary continued its stepped-up exploration program. Its field exploration offices were relocated to more strategic areas where natural gas might be found. And it participated as an owner in completing 12 wells during the year, five of which were producers.

Northern's gas sales in 1953 reached a new high of over 242 billion cubic feet. Full-time employees at the end of the year totaled 2,539, including those of subsidiary companies. Installed compressor horsepower reached 407,480, and total pipelines lengthened to 8,302 miles.

#### 1954

The advent of 1954 found Northern ready to go ahead with a construction program which increased total capacity to 1,100 mscf daily. Construction of transmission facilities for this expansion had been approved by FPC in 1953, and on March 12, 1954, Northern was authorized to construct the necessary facilities to serve 71 new communities in Iowa, Minnesota, Nebraska and South Dakota. The 71

new communities comprised the largest group of cities and towns to come on the line in any one year. Total cost of 1954 expansion program topped \$50,000,000, and at year's end, Northern was serving 349 Northern Plains communities.

The financing of the 1954 expansion program called for an issue of 365,000 shares of common stock which was oversubscribed by 30% and provided \$13,900,000. In addition, \$25,000,000 of 3 1/4% twenty year debentures were sold. The \$40,000,000 4 1/2% debenture issue of 1953 was replaced with an equivalent issue of 3 1/4% debentures. A vast improvement in interest rates prompted the new issue.

The year 1954 saw the completion of the construction of a wing to the Company's Omaha office headquarters building and the adoption of an Employee Stock Purchase plan whereby employees could purchase Northern common stock through payroll deductions.

Early in 1954, rates to be charged for the year were determined by negotiations with the Federal Power Commission so that revenues collected during the year were not subject to refund. In August, after a denial by the U. S. Supreme Court of Northern's request for reconsideration of its contentions with respect to controversial issues involved, all the rate cases pending at the beginning of the year (covering the years 1950 through 1953) were settled. Increased rates for 1955 were filed with the Commission and went into effect December 27, 1954, conditioned upon refunding amounts found by the Commission not to be justified. A settlement on the increase was made on June 28, 1956, allowing Northern an increase of \$4,136,852 annually.

#### 1955

In 1955 Northern observed its silver anniversary by presenting 21 Northern employees with 25 year service awards. By the end of 1955, system capacity was increased approximately 30 million cubic feet to 1,130 mmcf per day.

#### 1956

The list of employee benefits was augmented April 25, 1956, when stockholders voted overwhelmingly to adopt an employee stock purchase plan and stock option plan for key employees. The stock purchase plan permits an employee to allot from 1% to 6% by payroll deduction, depending on length of service. The Company contributes an amount equal to one-half of the employee's allotments. Funds are used to purchase Company stock.

While hearings continued before the FPC on Northern's 1956 expansion plans to serve 55 new communities, the FPC authorized Northern to construct facilities and begin full-scale testing of its underground storage area at Redfield, Iowa. First testing of this reservoir began in 1954.

On March 12, 1956, Northern filed an application with the Alberta Petroleum and Natural Gas Conservation Board for permission to export 300 million cubic feet of gas daily to Northern markets through proposed facilities of a wholly-owned subsidiary.

An FPC order requiring Northern to establish three zones with a differential rate was upheld by the U. S. Court of Appeals, 8th Circuit, in an Opinion issued July 9, 1956.

On June 30, FPC reversed an earlier decision and issued an order granting Northern permission to sell interruptible gas to the Black Dog Generating Station of Northern States Power Company in Minnesota.

In August, Northern's Board of Directors declared a third quarter dividend of 65 cents, an increase of 10 cents per share.

Northern made a major step forward on September 7, when FPC authorized the Company to increase gas sales by approximately 69 million cubic feet per day for 20 new towns in South Dakota and eight in Iowa. The Commission also authorized Northern to construct facilities to serve the St. Paul Ammonia Plant near South St. Paul, Minnesota.

In October, Northern purchased the American Legion Club Building at 2027 Dodge Street in Omaha--near the home office building--at a cost of \$475,000 to use for extra office space.

Northern's common stock reached a new high of \$50.50.

Near the end of the year Gilbert C. Swanson was named to succeed Farrar Newberry on Northern's Board of Directors.

Construction was completed on the 165-mile extension to Aberdeen, South Dakota.

Permian Basin Pipeline Co., Northern's subsidiary, filed with FPC for authority to build facilities which would tie-in with the new gas supply in the west central Texas area.

Increased employee benefits announced in December included a Widow Pension Plan, added life insurance benefits, and more liberal vacation policy.

1957

Six new gathering stations--three in Kansas and three in Oklahoma--went on Northern's line in January.

In February, Northern filed with FPC for an annual rate increase of \$6,466,932. A month later the Company filed application to provide service to 213 additional communities in the Northern Plains.

In April, Northern completed its first oil well, which was located in Pembina Field of Alberta, Canada. The Engineering Department moved its offices to the newly-purchased Company building at 2027 Dodge Street in Omaha.

On April 25, plans were announced and excavation got underway for a 16-story addition to the Omaha office building.

In June, the Company announced a new medical expense plan for retired employees. "Fortune" magazine listed Northern as one of the six major natural gas pipeline companies in the U.S.

Peoples purchased the gas distribution system in Dubuque, Iowa, effective November 1.

W. A. Strauss was named to the newly-created post of Administrative Vice President in December.

1958

Northern registered with Securities and Exchange Commission its proposal to issue 456,813 additional shares of common stock. A. B. Dilworth, M. L. Mead, W. L. Shoemaker and P. A. Gass were named Senior Vice Presidents.

In February, FPC rejected Northern's application to serve 177 new communities.

In March, a stock split-up in the form of a stock dividend doubled the number of outstanding common shares to 8,222,626, without changing the \$10 par value. Authorized common also was increased from 5 to 15 million shares.

A federal grand jury in Milwaukee indicted Northern and two other gas firms in April on charges of anti-trust law violations. President John Merriam asserted that "we have violated no law" and he said the charges would be vigorously opposed. Motions to dismiss the

indictment were filed by the defendants August, 1960. There has been no decision on these motions.

Ray L. Harrison, President of Peoples and Vice President of Northern, died of a heart attack. Don Sedgwick was later named Vice President and General Manager of Peoples to succeed Harrison.

In June, the Personnel Department was reorganized and renamed Employee Relations Department, with J. O. Grantham as Manager. Northern employee force reached 3,219.

Contractors resumed work on the Omaha office addition after an eight-week strike delay. A Public Relations office was opened by Northern in Minneapolis in September. The same month Northern's third president, Frank H. Brooks, died.

In October, FPC denied all applications in the complex Midwestern Gas case, including Northern's request to serve 208 new towns.

Spearman gasoline plant went into service in November. Northern's \$8,100,000 rate increase went into effect under bond.

Late in the year, Northern announced plans to file with FPC for authority to serve 326 new towns in six states. This figure was later revised to 342.

#### 1959

Northern Director Guy E. Reed died suddenly the day after New Year's. Peter Kiewit, of Omaha, was named to Northern's Board as his successor.

Six new Vice Presidents were named during the year, including J. O. Grantham, W. B. Hass, A. L. Vaughan, F. C. Nicholson, Randall Klemme and Earle Clark. Bill Strauss was elected Executive Vice President.

In January, Northern filed a petition with FPC to increase from 8 to 25 billion cubic feet the storage limit in Redfield's Mt. Simon Reservoir.

The new employee cafeteria on the sixth floor of the Omaha office building was opened in March.

Northern's Operating Division was re-organized in April with control centralized in two regional areas.

FPC approved Northern's applications to serve 342 new communities.

Northern petitioned FPC for a rate increase of \$9,800,000 annually.

Plans were announced to drill 30 wells in the Ft. Dodge-Webster City, Iowa area to explore underground storage possibilities.

Northern filed a statement with SEC seeking authority to issue 200,000 shares of \$100 par value preferred stock.

Producing Company was authorized to transact business in Ohio.

In October, FPC gave Northern authority to raise its maximum inventory in the Redfield Storage Area from 45 billion cubic feet to 55 billion.

Northern signed an agreement with Michigan Wisconsin Pipeline Company to send gas from Northern's system into the Milwaukee, Madison and Detroit areas.

The Company ended one of the most progressive years in its history with a total of 444 communities being served.

#### 1960

Plans were announced to expand facilities at Northern's gasoline and dehydration plants at Spearman. Northern received approval from the Iowa Commerce Commission to double its capacity at the Redfield Storage Area from 50 billion cubic feet to 100 billion cubic feet.

Northern Natural Gas Producing Company produced the one millionth barrel of oil from its wells in the Calgary district.

Northern notified FPC it was withdrawing its application to develop the depleted Otis gas field as an underground storage area.

The merger of Council Bluffs Gas Company and Northern became official on March 7. Northern's new distribution outlet in Iowa became known as Council Bluffs Gas Division.

On March 23, President John F. Merriam was elected Chairman of the Board of Directors.

Two new Directors were named early in 1960: Robert C. Anderson and Tilden Cummings.

Northern operations were greatly re-organized in July. One Operating Division was formed with Vice President A. L. Vaughan in charge, and Vice President W. B. Haas took command of the Engineering and Construction Division. In addition, six new area offices--in Minneapolis, Des Moines, Lincoln, Great Bend, Liberal and Midland--were created, under supervision of Area Managers, to continue decentralization of the Company.

In August, FPC issued Northern a temporary certificate permitting the Company to sell up to 100 million cubic feet of gas per day out of the St. Peter-Elgin Reservoir at the Redfield Underground Storage Area. It marked the first large-scale sales out of this project. At the same time, FPC also authorized Redfield's inventory to be increased up to 40 billion cubic feet in the St. Peter-Elgin Reservoir.

Formation of two new wholly-owned subsidiaries--Northern Propane Gas Company and Northern Gas Products Company--was announced in the fall. P. A. Gass was named President of both subsidiaries. This initiated Northern's diversification entry into the liquefied petroleum field. The purpose of Northern Propane Gas is to develop retail propane markets in the Northern Plains area, and Northern Gas Products was formed to process Northern's gas stream for LPG products.

Construction of a \$12,000,000 hydrocarbon plant at Bushton, Kansas, was started late in 1960. The plant will extract propane, normal butane, iso-butane and natural gasoline from natural gas for Northern Gas Products Company.

The 1960 Northern construction program added 67 new communities and increased system capacity in 1.525 billion cubic feet per day.

On November 30, stockholders of both companies formally approved the merger of Permian Basin Pipeline Company with Northern. The FPC granted formal approval one month later. The merger was transacted to increase administrative operating efficiencies of both companies.

W. A. Strauss was named President and Principal Operating Officer of Northern on December 13. Mr. Merriam retained his post as Chairman of the Board and also became Chief Executive Officer. In other action by the Board of Directors, Mr. Strauss and Senior Vice President A. B. Dilworth were named Directors, increased the Board to 10 members.

#### 1961

Northern greeted 1961 with the announcement of its biggest one-year expansion program in the Company's 31-year history. The program, costing \$91 million included: extension of service to 180 Northern Plains towns; facilities to deliver 12 million cubic feet of gas daily to the Reserve Mining Company's taconite plant at Silver Bay, Minnesota; more main line to deliver 75 million cubic feet per day to Michigan Wisconsin Pipeline Company at Janesville, Wisconsin; and the erection of a compressor plant at Farmington, Minnesota.

FPC authorized the Michigan Wisconsin sale in August. Work on the 82.5 mile project from Menominee, Illinois was completed in December.

Northern also purchased the 133-mile Northern Natural Gas Pipeline Company in west Texas. Northern had been the system's main gas buyer.

The entire year's construction and acquisition program lifted total pipeline mileage to 16,597, raised the number of customers to 1,100,000 in 691 towns served by 55 utilities. Daily system saleable capacity was increased to 1.7 billion cubic feet, boosted through the system by 589,290 compressor horsepower.

New financing raised some \$70 million to support the year's work. Two debenture sales brought \$55 million, and a common stock issue of almost 430,000 shares accounted for \$15 million. At the year end 9,023,247 shares of common stock were outstanding.

In January, Northern purchased 16 percent of the common stock of Transwestern Pipeline Company from Monterey Oil Company. Transwestern is a \$200 million transmission line extending from west Texas gas producing areas to Southern California.

In March, Ernest B. Blease became a new Company Vice President, heading the Regulatory and Forecasting Division.

A step which could significantly increase natural gas markets was taken by Northern during April, when the Company entered a joint venture with Houdry Process Corporation of Philadelphia to develop a natural gas fuel cell. The research project is being conducted at Houdry's laboratories in Linwood, Pennsylvania. Goal of the project is to generate high quality electricity in homes and commercial establishments by a silent chemical reaction between natural gas and air.

Northern continued its development of underground storage, receiving permission from FPC to increase withdrawals at Redfield from 100 million cubic feet a day to 189 million.

In March, the FPC allowed Northern a 6 1/4 percent rate of return and ordered a refund of \$763,000 to customers. During December the Company was placed on a firm rate for the first time since 1957. For the two-year period, 1960 and 1961, Northern was permitted to keep all but \$12 million of about \$53 million which had been collected under bond. Interest on the refund amounted to \$700,000.

At a directors meeting in August the quarterly common stock dividend was increased from 35 cents to 37 1/2 cents.

One of the major accomplishments of a highly-active year was a second step toward diversification - a contract with the Department of the Interior for the government purchase of helium from Northern's gas stream. A Northern subsidiary, Northern Helex Company, was the first of four in the nation accepted for the conservation program. Late in the year, Northern Helex began erecting an extraction plant at

Bushton, scheduled for completion in 1962. The government contract calls for production of 700 million cubic feet of crude helium annually for 22 years.

## 1962

During an unprecedented two-day cold blast, which covered its entire system, on January 9 and 10, Northern withstood the "acid test" of its career and met all of its contract commitments.

To bolster its long-range capacity, the company applied to the Federal Power Commission for an increase in its maximum Redfield storage inventory to 120 billion cubic feet and received permission from the Iowa Commerce Commission to begin development of a second underground storage area at Vincent, Iowa.

For purposes of accounting and a broader approach to business and scientific research, Northern consolidated its computing and data processing procedures into one department, adding an IBM 1401 computer and preparing for the installation of a larger Burroughs 5000 computer.

Construction for the year consisted mainly of laying 200 miles of gathering and transmission pipeline, building a compressor plant at Eunice, New Mexico and connection 19 new communities. Pipeline mileage at year-end reached 17,153 and communities served totalled 710. A revised application placed before the FPC requested the addition of still another 71 communities, including 44 in a major expansion into Wisconsin.

At mid-year Northern entered a partnership with International Minerals and Chemical Company for the construction and operation of Nitrin, Inc., a \$20 million fertilizer plant located near Cordova, Illinois. The site is part of a Mississippi River front industrial park purchased in September, 1961, by Northern Gas Products Company.

Executive changes during 1962 included the appointments of John J. Grela as Administrative Vice President of Northern, Charles F. Sanderson as Vice President of Northern Gas Products Company, and J. O. Grantham as Vice President of Peoples Natural Gas of Minnesota.

Continuing its diversification efforts for the year, Northern joined in a venture with the W. S. Moore Company of Duluth. The two firms formed the Iron Ore Research Company to assess new possibilities of upgrading ore from the iron ranges of Minnesota.

In August Northern announced the purchase of the Prince Maximilian - Karl Bodmer Collection for exhibition at Joslyn Art Museum. The documents and paintings record the explorers observations of the

Missouri River Valley in early 1830's.

The year also saw an increase (for the last two quarters) in dividends paid on common stock. Payments rose from 37 1/2¢ to 40¢ per share.

Late in 1962 the company completed an underground fall-out shelter at its Hooper compressor plant 50 miles northwest of its Omaha headquarters. The facility is equipped to be an alternate emergency operating and dispatching center for the extra 10-state system.

Just prior to embarking on the new year 1963, Northern moved into position to capitalize on two of its largest ventures at Bushton, Kansas.

Northern Helix produced the first helium to enter the Bureau of Mines pipeline for storage at Cliffside field near Amarillo, Texas. And Northern Gas Products received its FPC certificate allowing the extraction of LP-Gases (propane, butane, iso-butane and natural gasoline) from the parent company's supply stream. A 350-mile pipeline for transportation of these products is planned from Bushton to Des Moines, Iowa to connect with the Great Lakes Pipe Line for further transmission into Illinois and Minnesota.

February, 1963

Northern received authorization early in the year to receive new gas supplies from wells in Beaver County, Oklahoma and Lipscomb and Ochiltree Counties in Texas as well as from the Hunt-Baggett Field in Crockett County, Texas.

As a practice run in connection with conditions that might be experienced during a national emergency, four dispatchers took over control of Northern's entire system for a forty-eight hour period in January from the alternate underground dispatch point at Hooper, Nebraska.

Executive changes during the year included: F. Vinson Roach, elected General Counsel, Ross Albon, named President of Northern Propane Gas Company, R. D. Grimm, made a Vice President to head the Gas Supply Division, Hugh Roberts, promoted to Controller, and Vice President John Grela appointed to Northern's Policy Board. Leaving the company were General Counsel L. I. Shaw, Vice President E. B. Blease, and Director Robert Anderson.

The company continued to grow, receiving a certificate to serve seventy-six new towns (eighteen of which were on the system by the end of the year), and three additional towns were approved under a separate authorization. Nitrin Inc.'s plant in the Cordova

Industrial Park at Cordova, Illinois began production during the year. Construction also began on a three-level garage at the home office to provide additional employee parking.

Northern Propane Gas Company purchased the assets of the Rockford, Illinois Propane Gas Company, United Petroleum Gas Company of Minnesota, a Northern Liquid Petroleum Gas distributor with seventy plants in six states, and Ala Gas Company with plants at Hugoton, Kansas and L'Anse, Michigan.

Council Bluffs Gas Division was scheduled to become a part of Peoples Division on January 1, 1964. Peoples earlier in the year purchased the gas distribution facilities in Decorah, Iowa from the Decorah Gas Company and three towns from United Petroleum.

The Federal Power Commission issued Northern a certificate to construct nine miles of pipeline to deliver up to six million cubic feet of contract demand gas to Reserve Mining Company at Silver Bay, Minnesota and another to construct a new 5,940 horsepower compressor plant to replace the existing Grayco, Texas Plant to abandon the present Pembroke Compressor Plant and add compressor horsepower at Tate and Holcomb, Kansas.

The Mankato and Superior Pipeline Districts and the Welcome Compressor Plant were consolidated into one integrated operation at Welcome.

A Corporate Planning and Forecasting Department was formed during the year under Vice President John Hanley, a Rate and Certificate Department was formed, and a Public Relations office was established in Des Moines.

Diversification also continued in the company as Northern Gas Products' five-state Liquefied Petroleum Gas distribution system began operations with the delivery of the first Liquid Petroleum Gas from its own pipeline to the Great Lakes Pipe Line Company system at Des Moines. All rights to the Combex Burner, which produces controlled temperatures ranging from 3,300 to 9,000 degrees Fahrenheit, were purchased from Combustion and Explosives Research, Inc., of Pittsburgh, Pa.

Northern employees (Gas Transmission Operations) completed more than one million man hours without a lost-time injury for the first time in the company's history.

Common stock quarterly dividends increased during the year from 40¢ to 45¢ per share.

December, 1963

Continuing to grow and expand its pipeline system, Northern began serving 60 new towns in Iowa, Minnesota and Wisconsin during the year. Applications also were filed with the Federal Power Commission to connect 127 communities in Iowa, Nebraska, Wisconsin and Minnesota and 50 additional in the Upper Peninsulas of Minnesota and Michigan and in Northern Wisconsin.

Contracts were signed, and in a few cases FPC approval granted, with commercial ventures. Northern will supply gas to anhydrous ammonia fertilizer plants at Fort Dodge and Sioux City, Iowa and Fremont, Nebraska. Ore beneficiation plants at Hoyt Lakes and Forbes, Minnesota and six in Marquette County, Michigan will also receive gas from Northern.

Because of increased markets, the company also supplemented total reserves. During the year Northern's Gas Supply Division negotiated contracts dedicating an estimated 1.1 trillion cubic feet in additional reserves to the company's system. New supplies in the Permian Basin Area of West Texas and New Mexico, the Texas Panhandle, Oklahoma and Kansas increased the estimated reserves to 12.6 trillion cubic feet.

To transport the natural gas from new supplies to expanded markets, Northern filed several applications with the FPC to increase pipeline mileage by about 2,000 miles.

Northern reduced its rates to utility customers a total of \$4.9 million and Peoples Division announced reductions in four states totaling more than \$165,000.

Northern Propane Gas Company continued to grow and operating headquarters were moved to the Minneapolis office. Administrative offices remained in Omaha. Additional properties were acquired during the year. D. A. (Lars) Larson was named Vice President and General Manager of the Minneapolis office, Bill Duncan Vice President of Retail Operations and Harry Andrews Vice President of Wholesale Operations.

In other executive changes during the year, W. A. Strauss was named President and Chief Operating Officer of Northern Gas Products Company and remained as Chairman of the Board of that subsidiary. Ross Albon was made Vice President and General Manager of Gas Products and Northern Helex Companies and continued as President of Northern Propane.

Senior Vice President P. A. Gass was named Chairman and Senior Vice President M. L. Mead Vice Chairman of a Diversification Study Committee formed to study Northern's diversification needs. John Kyser and Charles Sanderson were assigned to serve as members of the committee. Sanderson, formerly Vice President of Northern Gas Products, was made Director of Special Research Projects and Kyser

was named Manager of Diversification for Northern.

Dale TeKolste was elected Group Vice President of Northern Natural Gas while continuing as Vice President and General Manager of Peoples Division. Herbert Sampson was named Vice President of Marketing and Vice President Randall Klemme was named Company Economist.

Northern's Board of Directors elected Stuart Silloway, President and Chief Executive Officer of Investors Diversified, Inc. of Minneapolis, as a new member of the Board. This brings the total to 10.

In a major 1964 transaction, Northern exchanged the capital stock of its subsidiary, Northern Natural Gas Producing Company, for 946,500 shares of Socony Mobil Oil Company, Inc. Gas reserves of the producing company continue to be dedicated to Northern under the same long term gas purchase contracts on file with the Federal Power Commission.

Northern's Board of Directors increased the quarterly dividends on common stock from 45¢ per share to 50¢ for the last two quarters of the year.

National awards were received for numerous safety achievements, among which were: 15 years and two million accident-free hours at a compressor plant, million hour awards in two Operating Districts, 25% or more reduction in frequency rate of personal injury and motor vehicle accidents by Distribution Division, and a sixth straight perfect record by employees at liquids removal plants. The company recorded its safest working year in history, with an accident average of 3.35 per million man-hours, compared to a 6.2 gas industry average in 1963. Employees also were recognized for saving the lives of three persons outside the company with knowledge gained in company first-aid classes.

January, 1965

Northern's daily system salable capacity reached the two billion cubic foot marker during the year, hitting 2.065 for the 1965-66 heating season. The new daily salable capacity revealed a jump of 121 million cubic feet from the previous year and the double figure recorded in 1953.

Several projects were responsible for achieving the milestone. The Mesabi Iron Range pipeline was completed during the year adding two taconite plants and 17 communities in Minnesota to the system. Authorization for the Upper Peninsula project came during the year. The 1965 portion completed facilities to serve six more ore plants and three communities to the system.

Two certificates reflecting increased daily demand of presently served customers for the 1965-66 heating season added nearly 68 million cubic feet to the capacity. A third application, filed in December, seeks to add an additional 55 million cubic feet to the system, 41.7 of which will be ticketed for present customers during the 1966-67 heating season.

Contracts with fertilizer plants near Fremont and Beatrice, Nebraska and Fort Dodge, Iowa; iron ore processing plants on the Mesabi Iron Range in Minnesota and firm sale contracts to several existing large volume customers also contributed to reaching the two billion mark.

Another project seeking approval went before the Federal Power Commission in November. In the proposal, estimated to cost \$19 million, Northern seeks to serve 131 new communities in Iowa, Minnesota, Nebraska and Wisconsin beginning in 1966.

Northern and its wholly owned subsidiary, Northern Natural Gas Transportation Company, filed with the FPC December 30 a proposal to deliver natural gas from western Canada to eastern Canadian markets via the United States. The \$200 million project--largest in Northern's history--will add about 1,150 miles of 12 through 36-inch diameter pipeline and 11 compressor plants with total horsepower in excess of 108,000.

Northern Propane Gas Company continued its expansion during 1965. Properties were acquired at Mount Pleasant and Centerville, Iowa; Wisconsin Rapids, Clintonville, Little Chut, Mauston, Waupaca, Plainfield, Amery and Ashland, Wisconsin; Pecos, Midland, Fabens, LaMesa and Van Horn, Texas; and Columbus, New Mexico. The Columbus facility is Northern Propane's initial venture into New Mexico.

Construction was started on 42 miles of 24-inch pipeline from Pecos County, Texas to Kermit, Texas. The line will connect 1.6 trillion cubic feet of gas reserves in the Coyanosa Field under contract to Northern.

Executive changes in 1965 saw three new vice presidents named and changes in responsibilities for three others. Gordon Severa became Vice President and General Manager for Peoples Division, Frank Stockman was named Vice President of Gas Supply Division and Vinson Roach was advanced to Vice President and General Counsel. Dale TeKolste was moved to Group Vice President--Administration and Dean Grimm, Group Vice President--Transmission. Vice President John Hanely was named Vice Chairman of the Committee on Future Gas Requirements and Supply of North America.

Northern's Hooper compressor and Oakland pipeline district operations were combined into one unit with headquarters at the Hooper plant.

Northern announced a \$3.5 million rate reduction during the year, and Peoples Division announced reduced rates amounting to \$475,000.

Severe weather conditions plagued the company's operation in 1965. A late March blizzard isolated seven of Northern's operating locations, while later in the spring and summer floods on the Mississippi and Arkansas Rivers affected Peoples' service in eastern Iowa and Dodge City, Kansas, respectively.

Quarter dividends on common stock were increased from 50¢ to 55¢ per share of the last quarter of the year.

January, 1966

-1966-

By the sixth consecutive year Northern effected a dividend increase on its common stock. In the fourth quarter the dividend was increased 5¢ per share to 60¢, for an indicated annual dividend rate of \$2.40.

Wholesale natural gas sales of 680 billion cubic feet were recorded a 10% increase over 1965. System salable capacity increased 161 million cubic feet daily, the largest capacity expansion in five years. Total system salable capacity was 2.226 billion cubic feet daily at year end.

Construction programs during the year added 152 new communities to Northern's system, bringing to 968 the number of towns served by the company through 77 utility customers. A present customer certificate boosted daily capacity 80 million cubic feet, taconite operations in Minnesota and Upper Michigan added 24 million daily and fertilizer plants 23 million cubic feet.

Construction added 1,323 miles of pipeline and 55,000 compressor horsepower to the system. Significant additions were the first 36-inch diameter pipe used by Northern and a 12,500 horsepower jet turbine driven compressor at Mullinville.

FPC hearings were held during the year on competitive proposals to deliver additional quantities of natural gas to eastern Canada. The project is presently under consideration by the FPC examiner to determine if the hearings should be reopened and what steps should be taken next.

Peoples Division operations reached into the state of Missouri for the first time during 1966. Distribution facilities in seven communities formerly owned by American Gas Company were acquired and included Rock Port, Tarkio and Fairfax, Missouri, Carter Lake, Hamburg, Sidney and Tabor, Iowa. Peoples also established a sales office in Amarillo, Texas to promote irrigation, farm tap and other sales of natural gas in west Texas.

Northern Gas Products Company, a wholly owned subsidiary, became a common carrier of LP-gases during the year and announced a \$10 million expansion program to provide a final link in a pipeline network which will connect major producing areas in the Southwest to the Chicago area, Ohio, Michigan and the East Coast. Pipeline additions will include 70 miles in the Chicago area and 19 miles connecting storage fields near Hutchinson, Kansas.

Hydrocarbon Transportation, Inc., a subsidiary of Gas Products, was formed to own and operate the common carrier facilities.

Another subsidiary, Northern Propane Gas Company, acquired new properties in Illinois, Iowa, Missouri and Nebraska. The trademark, Norgas, was adopted and will identify all of the company's trucks, stores and advertising. The subsidiary discontinued the various trade names used in several areas and will operate under the corporate name in all locations.

A major step toward entering the chemical business occurred with the announced proposal to acquire Mineral Industries, Inc. of Chicago. Final arrangements to acquire this leading marketer of antifreeze are expected to be completed in early 1967. Included in the purchase is a 15% interest in Calcasieu Chemical Corp. of Lake Charles, Louisiana which produces ethylene glycol, the principal chemical used in antifreeze. Mineral Industries will be operated as a wholly owned subsidiary.

Management Systems Company, another subsidiary, was formed initially to direct operations of the Lincoln Job Corps Center for Men. A contract was signed in March between Northern and the Office of Economic Opportunity to operate the Center on the deactivated air base near Lincoln.

The newly formed Energy Systems Division is developing a heating and coolings service for Omaha. Construction is underway on a central plant at 21st and Howard Streets which will provide steam for heating and chilled water for cooling to downtown buildings through an underground piping system.

Northern Natural Gas Pipeline Company was dissolved as a wholly owned subsidiary and the 150-mile pipeline and various facilities were absorbed by Northern.

John F. Merriam reached the optional retirement age of 62 and after 36 years of service resigned as Chairman of the Board and Chief Executive Officer. He continues as a Director and holds the positions of Chairman of the Executive Committee and Chairman of the Finance Committee of the Board. W. A. Strauss was elected Chairman of the Board and Chief Executive Officer while retaining his position as President.

Max A. Miller, a Director for 23 years, retired after reaching

mandatory retirement age.

Other important personnel changes included: R. K. Albon was named President of Northern Gas Products Company and President of Northern Helix Company; H. M. Sampson, Vice President, Corporate Development; W. B. Haas, Vice President, Construction and Right-of-Way; S. F. Segnar, Vice President, Administration; J. E. Moylan, Vice President, Marketing; Rocco LoChiano, Vice President, Engineering and Research and Development; J. O. Grantham, Vice President and General Manager of Management Systems Company; and J. R. Becraft, Vice President and General Manager, Hydrocarbon Transportation, Inc.

A new accidental death and dismemberment insurance plan was developed for employees. The retirement plan was modified to permit option retirement at full benefits as early as age 62 for those employees with 30 or more years of service.

The crash of a Northern plane March 11 near Kirksville, Missouri resulted in the deaths of five persons, three of whom were employees. This marks the first air-related injuries in the more than 20 years of company operated aircraft.

January, 1967

The Northern system became international in scope in 1967 when Northern Propane acquired the Protane Corporation with facilities in Central and South America and on three Caribbean islands. The new subsidiary markets liquified petrochemical products. Benton Murphy, President of the Protane Corporation, continues to head the operation with headquarters in Cleveland, Ohio.

Northern acquired Mineral Industries, Inc., of Chicago which is engaged in the distribution of ethylene glycol used in the manufacture of anti-freeze. The plant is located in Lemont, Illinois. Northern also acquired Viking Plastics of Minnesota, Inc., of Mankato, Minnesota which produces film for packaging, plastic gloves and a variety of disposable items, and National Poly Products, Inc., of Mankato, which also produces polyethylene film. National Poly became a division of Northern Petrochemical Company. David E. Fales was named president of the Division.

Northern Petrochemical bought Varney Chemical Corporation of Janesville, Wisconsin which manufactures the basic ingredients for fabric softeners, germicides, detergents and other surface active ingredients.

Continued expansion of large gas consuming and processing industries accounted for more than one-third of the system's capacity growth of 147 million cubic feet daily. A new ammonia fertilizer plant and two

existing plants required an additional 31 million cubic feet of capacity and taconite processing operations on the northern part of the system contracted for an additional 20 million cubic feet daily.

Northern tendered 959,000 shares of common stock of Transwestern Pipeline Company to Texas Eastern Transmission Company at \$16 a share, a total of \$15,344,000. The proceeds, 26¢ a share after taxes, were used for expansion programs.

For the seventh consecutive year Northern effected a dividend increase on its common stock. An increase of 5¢ per share made in the fourth quarter brought total dividends paid per share in 1967 to \$2.45 per share. This is an indicated annual dividend rate of \$2.60. Total dividends paid to stockholders during the year were \$22.7 million compared to \$20.6 million in 1966.

Wholesale natural gas sales of 729 billion cubic feet were recorded in 1967 an increase of 7% over 1966. Daily system salable capacity increased by 147 million cubic feet. Total system salable capacity was 2.373 billion cubic feet daily at years end. Proven gas reserves were 15.0 trillion cubic feet compared to 15.1 trillion cubic feet at the end of 1966. Production from reserves was 787 billion cubic feet.

Construction added 1,685 miles of pipeline and 72,795 compressor horsepower to the system. A major project announced was for a \$37.4 million chemical complex and pipeline for the production and transmission of ethane, ethylene and ethylene oxide, raw materials for the production of chemicals, plastics and anti-freeze. Of this, \$7.4 million was for an addition to the Bushton extraction plant of Northern Gas Products to extract ethane and \$15.4 million was for a 650-mile, six-inch pipeline to carry the ethane from Bushton to Clinton, Iowa, and ethylene from Clinton to Joliet, Illinois. A chemical complex will be built at Joliet to produce ethylene oxide and glycol. When completed in 1969, it will have an ultimate capacity of 240 million barrels annually.

A 369-mile, 30-inch pipeline from Kermit, Texas to Beaver, Oklahoma was completed at a cost of \$47 million linking Northern's Permian Basin system to the main line system and enabling gas supplies to move from the prolific Delaware Basin of west Texas. Hydrocarbon Transportation, Inc., completed work on a 70-mile pipeline to carry propane, butane and natural gas along the west side and through the south side of Chicago.

Five mined storage caverns, three near Lemont, Illinois and two near Des Moines, were completed during the year. They have a combine storage capacity of 450,000 barrels of product. A portable liquified natural gas plant with a 600 gallon per day capacity began operating on the Mesabi Iron Range in Northern Minnesota. The liquified natural gas is being used by the U. S. Steel Corporation to fuel two U. S. Steel Corporation 45-ton ore-hauling trucks nearby in a pilot

test of the new energy source.

During the year, Northern joined 20 other natural gas companies in sponsoring TARGET--Team to Advance Research for Gas Energy Transformation, Inc.--a \$20 million research program for the development of marketable fuel cell power plants operated on natural gas. Twenty-six new on-site electric generation installations generating 25,000 horsepower were obtained on Northern's systems during the year.

A Northern proposal to deliver natural gas from western Canada through the Northern United States to eastern Canadian markets was denied by the Federal Power Commission. However, the case has been appealed to the U. S. Circuit Court of Appeals in Washington, D. C. A decision is expected in the summer of 1968. The FPC authorized Northern to build facilities to increase deliveries to existing customers by 47 million cubic feet daily for the 1967-68 heating season.

The 1,000th community was added in 1967 to receive gas from Northern's system. Gross plant investment passed the \$1 billion mark due to major expansion programs and further diversification into the petrochemical field.

Fifty-three new communities were added to the system bringing the total to 1,034. Melrose, Minnesota, was the 1,000th and the event was marked by a turning-on ceremony attended by Northern, state and local dignitaries. An application was filed with the FPC to serve 16 communities in North and South Dakota, Northern's first entry into North Dakota. Application was also made to serve 61 new communities in Iowa, Minnesota and Wisconsin.

People's Division hit a new high with 140 billion cubic feet in sales compared to 127 billion cubic feet in 1966. Revenue increased from \$61 million to \$69 million. Peoples purchased the assets of Bemidji Gas Company, Bemidji, Minnesota. The firm operates a propane air distribution system serving approximately 700 customers. Peoples also acquire five natural gas systems in five Minnesota communities from Great Plains Natural Gas Company.

Management Systems changed its name to Northern Systems Company and signed a contract with the Federal Government to operate the Lincoln Job Corps Center for Men. The center was closed in 1968 as a result of budget reductions by the Office of Economic Opportunity. Other projects included an economic development project in 17 southeastern Nebraska counties and establishment of three training centers for the hard-core unemployed in Houston, Detroit and Los Angeles. At year's end, 121 persons had been trained in pre-vocational skills and placed in permanent employment.

Northern created a Corporate Research Department to place greater emphasis on research and development.

Senior Vice President Asa B. Dilworth retired after 36 years service with Northern. He will continue as a director of the company. Senior Vice President W. Larry Shomaker resigned as an officer of the company to pursue studies in Denver of national energy resources. Vice President Joe T. Innis elected early retirement after 37 years service. Jack C. Osborne was elected Assistant General Counsel for Northern.

Willis A. Strauss, President and Chairman of the Board, was elected President and Chairman of GATE--Group to Advance Total Energy--an organization formed to promote and develop markets for on-site energy systems and shaft horsepower applications for natural gas. Ross K. Albon, president of four Northern subsidiaries, was elected president of the National LP Gas Association.

Ernie Petersen, Assistant to the President and Assistant Secretary, died in September after an extended illness.

A new Disability Income Protection Plan and a Comprehensive Medical Expense Plan went into effect in 1967. Both include increased benefits for employees.

Northern's Harrisburg, South Dakota District completed 30 years without a disabling injury on December 16. According to the American Gas Association, this is a gas industry record.

January, 1968

-1968-

Construction, expansion and the promise of continued growth marked the year 1968 for Northern Natural Gas Company. Construction included a new petrochemical complex and the laying of several thousands of miles of pipeline. Expansion occurred with the addition of new towns to the system and the acquisition of a chemical manufacturing plant. And the promise came with all these things coupled with significant gains in sales and revenues.

Gross revenues for 1968 were \$406,159,000 compared to \$371,742,000 in 1967 and income from operations was \$40,125,000, up from \$38,958,000 the previous year. Earnings per share increased from \$3.95 in 1967 to \$3.98 in 1968. The increase would have been larger had it not been for unfavorable weather conditions for heating load and the 10% Federal income tax surcharge. The surcharge reduced income by \$2,368,000 or 26¢ per share. Total dividends paid to holders of common stock amounted to \$24.1 million or \$2.60 per share.

In 1968, the company sold \$105 million in long-term securities

consisting of \$50 million in 7 1/4% debentures, \$40 million of 7% debentures and \$15 million of 6.84% preferred stock. Expenditures of expansion and capital improvement for 1969 are estimated at \$140 million.

In July, Northern filed with the Federal Power Commission for an increase in rates to utility customers by approximately \$15 million annually. Northern began collecting this increase in February 1969 subject to final determination by the FPC. The company is seeking a 7 1/2% rate of return.

An extensive construction program helped to boost system sales capacity by 114 million cubic feet to a high of 2.487 billion cubic feet daily. This construction included the addition of 43,480 compressor horsepower, a 6% increase in total system horsepower to 804,000, four new compressor stations and 2,107 miles of pipeline.

The company added 17 new communities bringing the total receiving natural gas through 76 utility customers to 1,051. Wholesale natural gas sales were 782 billion cubic feet in 1968 compared to 729 billion cubic feet in 1967. Northern's proved reserves at the end of the year were 14.6 trillion cubic feet compared to 15.0 trillion cubic feet at the end of 1967. Gas purchased during the year totaled 848 billion cubic feet. A total of 3,701 wells were connected to Northern's system by year's end. While the reserve status is considered sound, Northern has intensified efforts to acquire additional reserves and has opened a new office in Houston, Texas to assist in this activity.

Underground storage at Redfield, Iowa reached an all-time high with 119.9 billion cubic feet of gas in place. Testing activity at the Vincent, Iowa field continues and an application to inject up to 18.0 billion cubic feet for additional testing will be filed with the FPC early in 1969.

Ground-breaking was held in April for a multi-million dollar ethylene oxide-ethylene glycol plant near Joliet, Illinois for Northern Petrochemical. The plant is scheduled to go into production in 1969. A new 65,000 square foot plant to house both National Poly Products and Viking Plastics divisions was completed in 1968 in Mankato, Minnesota. A second polyethylene film company was acquired in 1968 with the purchase of Casteo, Inc., or Long Island City, New York, in October. Also in 1968, Energy Systems Division began operation of its central heating and cooling plant in downtown Omaha.

A number of executive changes occurred in 1968 throughout Northern and its divisions and subsidiaries. In January, Calvin E. Forbes was named President and Chief Executive Officer of Mineral Industries, Inc. In July, William J. Haude was named President of Northern Petrochemical Company; Ross Albon was elected Chairman of the Board and Chief Executive Officer of Northern Propane and Hydrocarbon

Transportation, Inc., he remained as President of Northern Gas Products and Northern Helex, D. A. Larson was named President and Chief Operating Officer of Northern Propane U. S. operations; Benton Murphy was elected president of the Protane Corporation and a Director of Northern Propane, and John Becraft was elected President and Chief Operating Officer of Hydrocarbon Transportation, Inc. and a Vice President and General Manager of Northern Gas Products.

Peoples Natural Gas reorganized in August with the naming of Gordon Severa as President. Named vice presidents were Richard Mayne, George Mazanec, Robert Raasch and Lloyd Sharp. In November, David Fales was named Vice President of Northern Petrochemical.

During the year, Northern filed an application with the FPC for authority to provide a new Winter Period Service which would enable utility customers to nominate and receive firm volumes of natural gas during peak winter months above their contract for daily gas delivery.

The Job Corps Center in Lincoln, Nebraska, operated by Northern Systems Company, was closed in 1968. The company opened a Training and Job Development Center in Washington, D. C., and a prevocational training center in St. Louis, Missouri under the JOBS program sponsored by the National Alliance of Businessmen.

In 1968, Northern purchased a collection of art entitled "Artists of the Western Frontier". This collection, consisting of 86 works by 37 artists, covers a span of 100 years from 1820 and is housed in the Joslyn Art Museum in Omaha.

Northern's Board of Directors lost two members with the retirement of Mark Adams of Wichita, a board member for 20 years, and the death of Gilbert Swanson of Omaha.

At the March annual meeting board members Willis Strauss, Tilden Cummings, Asa Dilworth, Arthur Hyde, Peter Kiewit, John Merriam and Stuart Silloway were reelected. In June, J. Frank Forster, Chairman of the Board and Chief Executive Officer of the Sperry Rand, Corp. of New York City, was named to the Northern Board.

Research into agricultural application of gas and related products continued in 1968 including utilization of propane in producing greater crop yields and the use of liquified natural gas and compressed gas fuels.

Northern Natural Gas Company ended the decade in 1969 with optimism and confidence in the future of the corporation and the natural gas industry. This optimism was due, in part, to announced plans to tap the natural gas reserves in Canada for import into the United States through a series of thousands of miles of pipeline to be constructed. Northern's diversification program, congeneric in nature, i.e. using natural gas as the source, continued to grow,

especially in the petrochemical field. Some new towns were added to the system, new services were instituted and the company experienced new highs in revenue and earnings.

Gross revenues for 1969 were \$443,604,000, up from \$406,159,000 in 1968 and income from operations was \$41,858,000 compared to \$40,125,000 the previous year. Earnings per share increased from \$3.98 in 1968 to \$4.02 in 1969. Total dividends paid to holders of common stock amounted to \$24.2 million or \$2.60 per share. Extraordinary items not included in these figures resulted in an addition of \$1,775,000 to net income and 19¢ in earnings per share in 1969. These resulted from the gain on the sale of 360,000 shares of Mobil Oil Corporation stock and the loss from the write-off of a 50% investment in Nitrin, Inc.

The company sold \$15 million 8.48% Debentures (five-year maturity). Expenditures for expansion and capital improvement for 1970 are estimated at near \$217 million of which 51% will be for natural gas facilities, 38% for petrochemical facilities and the remainder for other operations and improvements. In addition, Canadian pipeline facilities are estimated to cost \$196 million of which \$64 million will be related to the portion constructed in Canada.

System sales capacity increased 192 million cubic feet in 1969 due to expansion. Total daily salable capacity stood at 2.6 billion cubic feet at year-end. Northern increased wholesale natural gas sales to 791.3 billion cubic feet from 781.8 billion cubic feet in 1968. Proved reserves at the end of the year were 16.8 trillion cubic feet, including 2.6 trillion cubic feet under gas purchase contracts in Alberta and Montana compared to 14.6 trillion cubic feet in 1968. Gas purchased in 1969 totaled 450 billion cubic feet. A total of 96 wells were connected to Northern's system by year-end.

Gas in place at the underground storage field in Redfield Iowa totaled 99.9 billion cubic feet of gas in place.

In February, Northern announced plans to spend approximately \$9.6 million for facilities to provide a new "Winter Period Service" starting with the 1969-70 heating season for its natural gas consumers. The new service will initially provide Northern's utility customers with an additional 88 million cubic feet of gas per day during the period. Estimated demand will build to an additional seven billion cubic feet annually. Northern increased the price of natural gas to its utility customers subject to final determination of a rate case before the Federal Power Commission. The increases would give the company a 7 1/2% rate of return on its investment.

In March, the only major pipeline project Northern ever planned under winter construction conditions was completed from near Ashland, Wisconsin, to Park Falls, Wisconsin. Also in March, Northern's first sulfur recovery plant, placed in operation at Hobbs, New Mexico, in

November, 1968, was reported in full production. The Federal Power Commission approved Northern's application to increase daily system salable capacity by 75 million cubic feet. The necessary facilities will cost about \$16 million.

Northern Petrochemical Company's Board of Directors authorized an \$800,000 expansion project for Varney Chemical Division at Janesville, Wisconsin which will expand capacity by about one-third.

Northern announced plans at a press conference in Calgary, Alberta, Canada, in March to invest in natural gas development in Alberta and the Northwest Territories. The \$1.4 billion project over the next five years would include a 36-inch pipeline, to be completed in 1972, running 900 miles from Empress, Alberta to North Branch, Minnesota and possibly a 1,700 mile, 36-inch pipeline originating in the Northwest Territories and terminating at North Branch. The company also announced it had obtained a majority interest in Consolidated Pipe Lines Company and Consolidated Natural Gas, Ltd., both Canadian firms.

H. M. Sampson, Vice President for Corporate Development, was named President of Consolidated. Elected Vice Presidents of Consolidated were John Brady, Nicholas Lashuk, A. T. C. Rutgers and Douglas Nichols. Other executive changes within the corporation during 1969 included the naming of L. P. Massari as new chief executive of the Industrial and Automotive Group and William T. McLaughlin as President of Castco, Inc. Gordon Severa was elected Group Vice President-Transmission replacing R. Dean Grimm who resigned. Jack Osborne was elected to succeed Mr. Severa as President of Peoples Natural Gas Company. In July, Dale TeKolste was named Financial Advisor to the President, George Mazanec was elected Treasurer; F. Hugh Roberts was elected a Vice President and will continue as Controller; J. Alec Merriam was named Assistant Controller and Donald Iburg was named Vice President-Administration for Peoples. Stephen Sulentic was named Vice President and Controller of the Liquids Subsidiary Group in August.

At the annual meeting in March, Northern stockholders approved three new financing amendments: increased the total authorized shares of \$100 par value preferred stock from 750,000 to 1,500,000; created a second preferred stock, par value \$1; and made possible the issuance of securities convertible into common stock. In April, Northern received permission from the Federal Power Commission to withdraw an application to serve 60 new towns in Iowa, Minnesota and Wisconsin because the cost was economically unfeasible.

In June, the Federal Power Commission approved a \$7.5 million rate adjustment to provide increases in jurisdictional revenues from pipeline operations. Nitrin, Inc., announced it was closing its nitrogen fertilizer plant at Cordova, Illinois indefinitely. In July, Northern and Plateau Natural Gas Company of Colorado Springs,

Colorado announced jointly they had agreed in principle for Northern to acquire the assets of Plateau for an undisclosed number of shares. Northern that month joined the Stanford Research Institute, Clin Corporation and the Jonathan Development Corporation in an experimental homebuilding program in the new town of Jonathan, Minnesota.

Northern Petrochemical announced in August plans to spend \$125 million over the next three years to expand its Joliet, Illinois polyolefin complex into one of the largest and most modern in the world. The subsidiary also acquired the assets of Weskem, Corp. of Borger, Texas which markets various chemicals used by natural gas, petroleum and petrochemical companies in the producing areas of the Southwest. In September, Northern Petrochemical revealed plans to acquire the low-density polyethylene business of Monsanto Company.

In October, Northern filed a settlement proposal with the Federal Power Commission which would provide present customers with additional volumes of gas up to 146 million cubic feet daily; extend Winter Period Service sales to 1971; and would provide service in 1970 to communities who contribute to branch line construction. Two portable turbines were installed at the Owatonna Compressor station.

Northern asked the Federal Power Commission in November for authorization to provide an additional 146.5 million cubic feet daily to present customers by the start of the 1970-71 heating season at a cost of approximately \$8.3 million in new facilities. Energy Systems completed its first full year of operation with results above projections and Northern and Montana-Dakota Utilities Company agreed on an exchange of gas.

In December, ground-breaking was held for Northern Petrochemical's billion-pound-per-year olefin plant at Joliet, Illinois and the Oil and Gas Conservation Board of Alberta granted Consolidated a permit to export 1.535 trillion cubic feet of gas from the province.

Senior Vice Presidents P. A. Gass, M. L. Mead and W. L. Shomaker retired in 1969.

# NORTHERN *Natural* NEWS

Published by Department of Information of Northern Natural Gas System  
CITY NATIONAL BANK BLDG. OMAHA, NEBRASKA

Volume 1

OMAHA, NEBRASKA, AUGUST, 1931

Number 1

## GROWING DAILY

### Northern Natural Has More Than 968 Miles of Pipe

The growth of the Northern Natural Gas System has been so phenomenal that it is eligible for the whole space devoted to the famous "Believe It Or Not" feature in every newspaper of the middle west.

During the fifteen months existence of the System, it has more than \$30,000,000.00 invested in pipe lines and other equipment. Two major construction activities as well as several smaller projects are now under way, and by the end of the year the investment will be considerably larger.

The company now has 968 miles of completed pipe line and has 219 miles of major pipe line under construction. A map on page 4 of this issue shows the territory served by the System. The headquarters of the System are in Omaha, approximately the geographical center of Northern Natural's territory.

In addition to the many towns and cities we are now serving, we have scores of other communities asking for natural gas and we are planning and building for them as rapidly as possible.

News items and suggestions for the Northern Natural News are solicited. Please address communications to John F. Merriam, Director of Information, Northern Natural Gas System, City National Bank Building, Omaha, Neb.

## THE NORTHERN NATURAL GAS COMPANY

GENERAL OFFICES, 231 South LaSalle Street, CHICAGO

The Northern Natural Gas Company was organized in April, 1930, its ownership being vested in the following utility companies: North American Light & Power Company of Chicago, The United Light & Railways Company of Chicago, and The Lone Star Gas Company of Dallas, Texas. The Officers of the Company are as follows:

Chairman of the Board.....	Clement Studebaker, Jr.....	Chicago
President.....	Wm. Chamberlain.....	Chicago
Executive Vice President.....	L. E. Fischer.....	Chicago
Vice President.....	L. B. Denning.....	Dallas
Asst. Vice President.....	H. J. Carson.....	Omaha
Secretary and Comptroller.....	D. A. Huley.....	Dallas
Treasurer.....	A. J. Berta.....	Chicago
Asst. Secretary.....	D. H. Holmes.....	Chicago
Asst. Secretary.....	B. J. Olsen.....	Chicago
Asst. Treasurer.....	W. D. Gale.....	Chicago

### BOARD OF DIRECTORS

George T. Buckingham	B. J. Denman
Frank H. Brooks	L. B. Denning
R. B. Brown	L. E. Fischer
Wm. Chamberlain	T. B. Gregory
F. W. Crawford	H. L. Hanley
Clement Studebaker, Jr.	

### EXECUTIVE COMMITTEE

B. J. Denman, Chairman.	L. B. Denning	L. E. Fischer
General Manager.....	Frank H. Brooks.....	Omaha, Nebr.
General Counsel.....	George A. Lee.....	Lincoln, Nebr.

### OPERATING DIVISION

#### THE MISSOURI VALLEY PIPE LINE COMPANY

General Office, City National Bank Building  
Omaha, Nebr.

### OFFICERS

President.....	F. H. Brooks.....	Omaha
Executive Vice President.....	L. E. Fischer.....	Chicago
Vice President.....	L. B. Denning.....	Dallas
Vice President.....	H. L. Hanley.....	Chicago
Vice President.....	B. J. Denman.....	Chicago
Assistant Vice President.....	H. J. Carson.....	Omaha
Secretary and Comptroller.....	D. A. Huley.....	Dallas
Treasurer.....	A. J. Berta.....	Chicago
Assistant Secretary.....	D. H. Holmes.....	Chicago
Assistant Secretary.....	B. J. Olsen.....	Chicago
Assistant Treasurer.....	W. D. Gale.....	Chicago
General Counsel.....	George A. Lee.....	Lincoln

### BOARD OF DIRECTORS

F. H. Brooks	L. B. Denning
Wm. Chamberlain	L. E. Fischer
B. J. Denman	H. L. Hanley



# Field of Operation of Northern System

The Northern Natural Gas System organized only fifteen months ago has already covered a very large section of the Middle West territory lying between Texas on the South, and Minnesota and the Dakotas on the North. It serves at the present time 58 cities and towns, providing Natural Gas Service to a population of over 250,000 people in the states of Kansas, Nebraska and Iowa through approximately 1500 miles of pipe line.

### Cities and Communities Served.

#### Kansas:

##### # Argus Pipe Line Company--

- Cimarron
- Copeland
- Dodge City
- Elkhart
- Ensign
- Fowler
- Hugoton
- Meade
- Montezuma
- Moscow
- Plains
- Rolla
- Satanta
- Sublette
- Cudahy Silica Mine near Meade
- The Soldiers Home at Fort Dodge

##### # Garden City Gas Company-- Garden City

#### Nebraska:

##### # Peoples Natural Gas Company--

- Auburn
- Humboldt
- Pawnee City
- Sterling
- Tecumseh

##### # Fairbury Gas & Electric Company-- Fairbury

##### Iowa-Nebraska Light & Power Co.--

- Lincoln
- Beatrice
- Plattsmouth
- Bee
- Clatonia
- Cortland
- Crete
- De Witt
- Dorchester
- David City
- Friend
- Hallam
- Milford
- Oseola
- Plymouth
- Rising City
- Seward
- Staplehurst
- Shelby
- Ulysses
- Wilbur
- Arlington
- Blair
- Craig
- Oakland
- Tekamah
- Wahoo
- Stromsburg

##### The Central States Electric Co.--

- Lyons
- Roscoe
- Walthill
- Winnebago

##### The Elkhorn Valley Power Company--

- Hooper
- Scribner

##### Industries served directly from the Main Line--

- Nebraska Cement Company, Superior,
- Fairechild Clay Products Co., Endicott,
- Marth Packing Company, Fairbury,
- Kahler Pottery, Louisville.

#### Iowa:

- The Council Bluffs Gas Company, Council Bluffs.
- The Peoples Gas & Electric Company, Mason City.
- Fort Dodge Gas & Electric Company, Fort Dodge.
- Armour and Cudahy Packing Plants, Sioux City.

##### # Divisions of the Northern Natural Gas System.

## Missouri Valley Head



● FRANK H. BROOKS

Frank H. Brooks, president and general manager of the Missouri Valley Pipe Line Company, operating division of the Northern Natural Gas System, has had a broad and varied public utility career.

Starting in the street railway field at Erie, Pennsylvania, in 1896, his activities took him later to the copper regions of Michigan as electrical engineer of the Peninsula Electric Light and Power Company, Houghton. In this field Mr. Brooks did pioneering work in ending the development of hydro-electric plants and long distance transmission of power. In 1902 he went to Vicksburg, Mississippi, as general manager of the utilities system of that city. Later he went to Lincoln, Nebraska, as manager of the Lincoln Traction Company. In 1913 Mr. Brooks became associated with the Continental Gas & Electric Corporation, first as manager, then vice-president and general manager, and later president and general manager of its succeeding company, the Iowa-Nebraska Light and Power Company--a subsidiary of the United Light and Power Company.

In addition to management, operating, and executive work, Mr. Brooks has also been active in state, sectional, and national association work. He has been president of the Nebraska Section of the National Electric Light Association and, also, President of the Midwest Division of that association, comprising the states of Iowa, Nebraska, Missouri, and Kansas. He is, therefore, keenly alive to the utility problems and necessities of this section of the middle west.

# Resources of System's States Worth Billions

The resources, both in underlying value and in productive possibility, in the territory served almost exclusively by the Northern Natural System, reaches into the billions.

In Iowa, Nebraska, Minnesota and South Dakota, the Northern Natural is pioneering and the territory served in these states is without competition.

In these four States, the total wealth listed by the Department of Commerce of the United States is \$30,052,000,000.

In these four States, where the Northern Natural is pioneering and is practically assured of a major portion of the business, the value of agricultural products is approximately \$1,800,000,000 per year. These figures are taken from the 1930 reports of the Department of Commerce and include "crops and animal production".

The total manufacturing output in these four States, using figures from the same source, is approximately \$2,650,000,000 per year.

The per capita wealth is higher than in almost any other section in the Nation, averaging more than \$4,000.

In these four States where the Northern Natural has elected to pioneer, there are 2,280 cities and towns, and the population of the four States is 7,057,000.

In these four States there are 9,754 manufacturing establishments, practically every one of which is a prospective customer for natural gas.

This northern territory is also particularly attractive as a natural gas market on account of the climate. Those using gas for heating purposes will use it from six to nine months per year. Furthermore, at least half of the territory is entirely devoid of coal resources and none of the territory has any oil resources.

Although the Northern Natural System is a giant today, the natural gas business in the four States of Iowa, Nebraska, Minnesota and South Dakota is today an infant industry. The surface has scarcely been scratched.

## Largest Pipe Line Under Construction

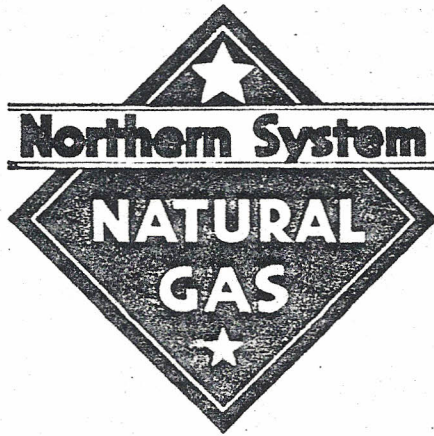
The largest size natural gas pipe line in the world is now under construction as a part of the Northern Natural Gas System extending 183 miles across the state of Kansas between Mullinville and Clifton. It is a 26-inch line.

The only other line equal in size is now under construction in California between the Kettleman fields and Los Angeles.

The capacity of this 26-inch pipe line will be more than 225 million cubic feet per day. This new line forms a very important link in our system, connecting our extensive gas holdings in Texas and Kansas with our northern markets in Nebraska, Iowa, South Dakota and Minnesota.

Construction is under the direction of our engineers, and is being done by Smith Brothers, Inc. The contractor is employing about 350 men and should complete the line by January 1.





Executive Vice-President



● L. E. FISCHER

Gas Development company and other properties.

Mr. Fischer is known as a dominating executive, with the happy faculty of holding the cooperation, good will and esteem of his employes.

100 Towns to be Served Before 1932

More than one hundred towns will be served by the Northern Natural Gas company by the end of 1931 as a result of the many branch lines now under construction or planned for early construction.

Among the towns to be added during the next two months are the following, Iowa Belmont, Britt, Carson, Farnhamville, Fort Dodge, Garner, Gowrie, Harcourt, Lake City, Lehigh, Leboville, Manson, Marne, Oakland, Ogden, Rockwell City, Walnut, Nebraska Adams, Ashland, Bancroft, Elkhorn, Elmwood, Emerson, Johnson, Louisville, Palmyra, Pender, Valley, Wakefield, Waterloo, Wayne, Weeping Water, West Point. Under negotiations pending many other cities and towns will be served before the end of the year.

EDITORIAL

Purpose of the News

The purpose of the Northern Natural News is primarily to acquaint the employes of the Northern Natural Gas System with an account of its progress and development. It is a medium through which the cooperative spirit may be more fully developed and through which a more cohesive and co-ordinated organization may be accomplished.

Peculiar to our industry, the personnel of its organization is widely scattered and its employes are located in seven states, Texas, Oklahoma, Kansas, Iowa, Nebraska, Minnesota and South Dakota.

To bring home to all these scores of employes the realization of the part that they have in this large and growing organization and the importance of the responsibilities that rest with them, is another purpose to which this publication is devoted.

In the pages of this publication will be pictures and news built into a romance suggestive of the days that built the middle-west, as exemplified in the pioneering spirit which is bringing to this same territory the most ideal of all nature's fuels, one of the greatest of the world's natural resources—Natural Gas.

F. H. BROOKS.

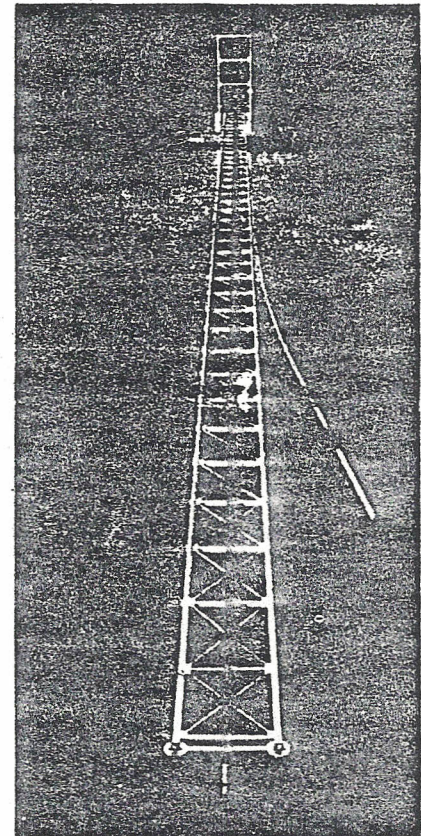
Natural Gas in Des Moines

Natural gas will soon be available in Des Moines, the largest city and capital of Iowa. The branch line, which is now under construction, takes off from our 24-inch main line at Ogden, continuing southeast for thirty-six miles until it reaches the city limits of Des Moines.

The natural gas will be used to enrich and supplement the present artificial gas service.

Reece McGee, Inc., the company which has the contract for the construction of the line, has a force of 175 men employed.

Across the Platte



● This is the way the 16-inch Pipe Line crosses the Platte River near Fremont, Nebraska

L. E. Fischer, executive vice-president of the Northern Natural Gas company and its subsidiary companies, began his public utility work as superintendent and manager of the Danville Street Railway and Light Company thirty years ago.

Mr. Fischer is the operating vice-president of the North American Light and Power company, one of the three proprietary companies of Northern Natural.

Following his graduation from St. Louis Manual Training school and the University of Illinois, he became assistant to the city engineer at Kewanee, Ill., and then city engineer at Paris, Ill.

When Mr. Fischer was twenty-seven years old, he was made vice-president and general manager of the Illinois Traction System, now the Illinois Power and Light corporation. In 1909 he resigned to conduct his own business enterprises with offices in St. Louis. He still controls the Missouri Rolling Mill corporation and other properties.

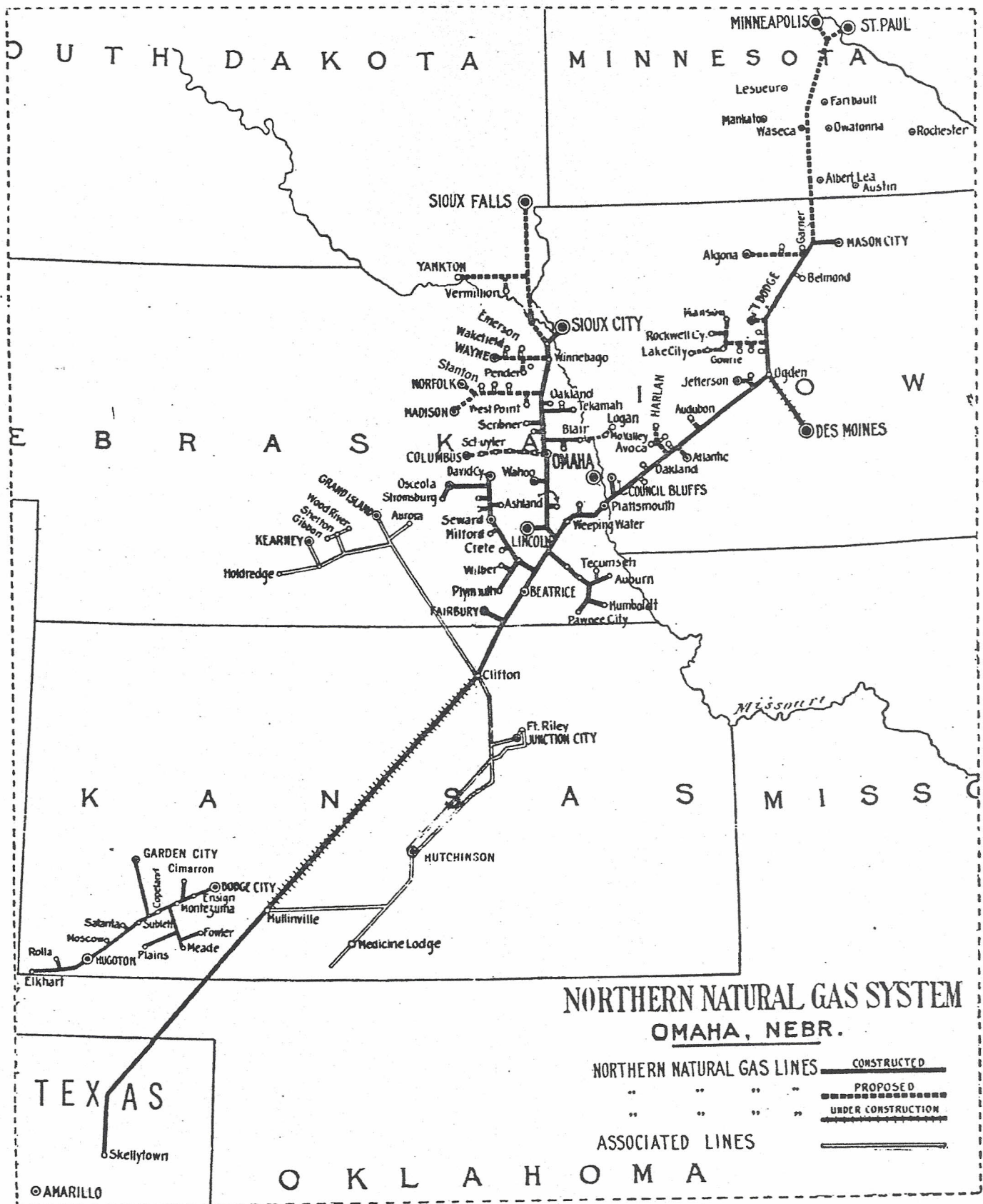
Upon the organization of the North American Light and Power company in 1926, Mr. Fischer was invited to resume the management of the properties of that company, important units of which are: The Illinois Power and Light corporation, Iowa Power and Light company, Missouri Power and Light company, Kansas Power and Light company, Illinois Terminal Railroad System.

The Kansas properties of the North American Light and Power company have developed an extensive natural gas business, including the Kansas Pipe Line and Gas company and the McPherson Oil and





# TERRITORY SERVED BY NORTHERN SYSTEM



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