MUELLER Record

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"The Richest Hill on Earth" . . . . . - See Page 8

Mueller Record

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Our Cover

The bright Colorado sunlight shines into this man-made cavity in the earth to light the way of progress. Pictured is a Colorado Springs Water Department crew laying transmission lines on the eastern slope of the great Continental Divide. Notice the rugged terrain through which the men had to burrow in order to lay the lines. When transmission work on the eastern slope is completed, long-range plans call for work to begin on the western slopes, which promise to be even more nerve-racking on man and machine.

Recording Our Thoughts . .

This column is written on Friday, March 22. It is a day that normally would hold no special significance in our life unless you would consider that we made it to work on time every day this week—somewhat of a record for the writer.

But this Friday, March 22, does have special meaning for us. It is our last day as an employee of Mueller Co., our farewell as editor of the Mueller Record.

The editor—Walter H. Dyer—is leaving to join the American Gas Association in New York City March 25 as editor of the AGA Monthly magazine.

Now like most editors, we would like to say something lasting in this final column, so we took from the bookcase a copy of HOYT'S NEW CYCLOPEDIA OF PRACTICAL QUOTATIONS, and turned to the section entitled FAREWELL. Finding a suitable quotation wasn't easy, and in fact, most wouldn't be appropriate at all. For example, there is this one: "Sweets to the sweet; farewell!" from Shakespeare's HAMLET. Or this: "So sweetly she bade me adieu, I thought she bade me return" from Shenstone's A PASTORAL BALLAD."

The one we like best is Byron's farewell taken from CHILDE HAROLD. He wrote: "Farewell! a word that must be, and hath been —A sound which makes us linger; —yet—farewell!"

A little dramatic, perhaps, for the simple departure of an editor, but after nearly four years association with a company as compatible as Mueller, you have an urge to linger on, as the final farewell approaches.

No doubt about it, Mueller Co., its people and its favorable position in the water and gas industries has made a lasting impression on this person who in just a few hours will be listed as former employee.

The pleasant memories will linger on, and, as we close the pages of the cyclopedia, we find this little verse from ANTHONY AND CLEOPATRA: "Fare thee well; The elements be kind to thee, and make thy spirits all of comfort!"

That seems like a good way to bring this to an end.

P.S.

All of us at Mueller Co. join in wishing Walter Dyer the best of everything in his new venture. He contributed of his time and ability to issue RECORDS of which we may all be proud.

Jim M. Milligan
Assistant Editor

Thank You

We wish to extend our thanks to Mr. E. L. Mosley, Project Engineer of the Denver Board of Water Commissioners, and to WATER WORKS ENGINEERING, issue of May, 1956, from which we have reprinted Mr. Mosely's article concerning the 15-year water works expansion plan being undertaken by Denver at a cost of $100 million.

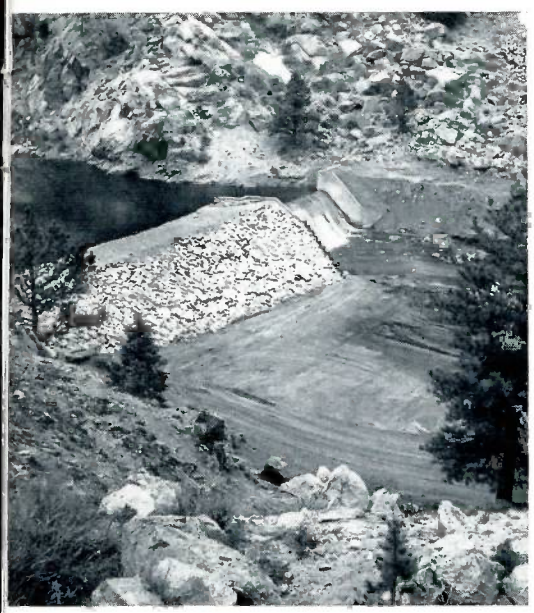
Our thanks also go to the Public Service Electric and Gas Company of Summit, New Jersey, for the fine information which you can find on the back cover of this issue.

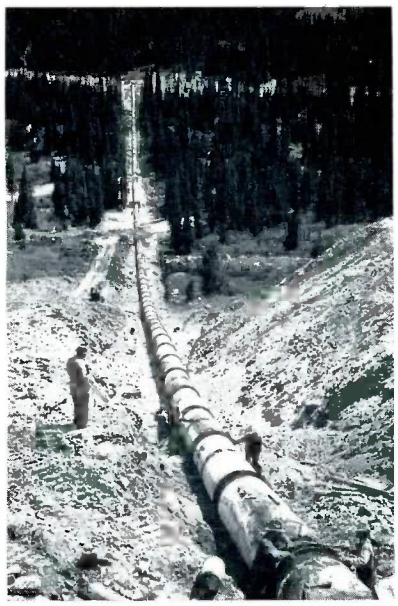
CONTENTS

. . . NEXT MONTH . . .

PROFILE OF PROGRESS: Tuscola, Illinois, was a sleepy, quiet town a few miles south of Champaign [Ill.] until residents awoke one morning to the chatter of drills and the banter of workmen. Read what happened when industry came to this Illinois town, and changed the lives of its people.

LOOKING BACKWARD: Beginning with the May issue, join us in searching through RECORDS from years back. We'll pick up bits of information of humor and general interest. Together we'll learn of progress through the years, both of Mueller Co. and its customers.





ON THE LEFT is a 20-inch iron main which feeds the northeast section of Colorado Springs. The inset again depicts the dexterity of these water department workmen as they lay lines through mountainous terrain in the vicinity of Colorado Springs. Above: the Lake George diversion dam, and two panoramic views to illustrate the length of the lines.

Colorado Springs, Colorado

In The Shadow of the Divide

IN 1859, a party of Kansas gold hunters founded El Dorado City in east central Colorado. Despite beautifully-lithographed and widely-distributed maps which ". . . emblazoned to the world that a new town had enlarged the area of civilization . . .," the venture failed, and El Dorado City was rechristened Colorado City.

By 1861, more than 300 cabins had been erected along the river; the town advertised its free highway to South Park, its medicinal waters, and the Garden of the Gods. In 1862, it became the Territorial capitol for a brief period when the Second Territorial Legislature met there for four days. The legislators, however, disliked the accomodations and distractions. Besides, word was received that Fort Sumter had been fired upon. The Territorial Governer never saw fit to transfer his office to the new city.

Colorado City was a wild and riotous town in those days. Brawls and shooting affairs were common, and justice was meted out by a citizen's court. In 1863, the first church services were held, and there was one mighty-surprised minister. He found one lone worshipper in the church! This man explained that a Mexican horse-thief had just been captured, and his trial was in progress. Promptly convicted, the culprit was taken to the nearest cottonwood and hanged, after which the assembled citizens trooped into the hall and listened to a sermon on ". . . the judgement to come."

Very different was the founding of Colorado Springs, the eastern section of Colorado City. Its founders planned a community to attract and hold people of means and social standing, a citizenry of "good moral character and strict temperance habits." They made it clear that all manufacturing was unwanted. Mills, smelters, saloons and gambling houses were to be confined to boisterous Colorado City. But, as might well be expected, the people of Colorado City decided that the grass was greener on the other side. After much dispute, the "iron curtain" was raised, and a gradual fusion of the two populations took place.

Droughts on the eastern plains, and grasshopper plagues in 1873 and 1874 did not materially affect the community, but much anxiety occurred when the Arapahoe Indians went on the warpath. All able-bodied citizens were called to arms, but the affair was short - lived, marking the end of Indian troubles in the region. In 1873, Colorado Springs replaced Colorado City as the county seat.

The year 1871 was the period of great revival for the slipping Colorado City, for that was the year of the great Cripple Creek gold strikes. The city became a lively industrial center; several ore-production mills and railroad shops were built; mill-workers and miners came to town for supplies and amusement. This "boom," however, was short-lived.

J. S. NICHOLS
Water Superintendent
Colorado Springs
Department of
Public Utilities

The great gold fortunes were taken to the east coast to be spent, and the town began slipping toward oblivion. In 1917, absorbed by its thriving rival to the east, Colorado City became West Colorado Springs.

From its very beginning, Colorado Springs was a haven for tourists and health - seekers. Little thought was given to problems of water supply and distribution. Ditch-water was carried in tubs for domestic purposes, and clear, cold drinking water was sold in the streets for twenty-five cents a barrel. Vegetables grew only in cans, and all meat was supplied by a local market.

The beginning of the present water system was the authorization and issue, in 1878, of $80,000 in bonds for the construction of a pipe line. The first step in constructing a water system was the laying of a main from Ruxton Creek to the mesa in West Colorado Springs, with the construction of a reservoir at that point. Water was brought to the city from that point by means of a 12-inch main, and was distributed throughout the city by laterals from this main. About ten years later, Mesa Reservoir No. 2 was constructed, and the city thereby acquired storage capacity of approximately ten million gallons.

In 1889, a 16-inch main was laid from Manitou Springs to Colorado Springs. The next steps were directed towards development of a collection system and storage facilities on the south slopes of Pikes Peak. In 1891, Lake Moraine was completed on a tract of land purchased from the federal government, adding a 260 million gallon capacity to the city's supply.

By 1896, the people of Colorado Springs began to realize the importance of an adequate water supply to the future growth of their city. The ten year period from 1896 to 1906 saw great progress. Four new reservoirs, with a combined capacity of 1500 million gallons, were built for storage purposes. Two tunnels for water distribution were constructed. In 1904, work was initiated on the laying of pipe lines from Manitou Springs to better service the north and east sections of Colorado Springs.

Colorado Springs continued to grow steadily, which necessitated an active and progressive program for the Water Department, such as extension of supply lines throughout the city, increasing of reservoir capacity, and the installation of new and larger lines from Lake Moraine and other storage sites to the Ruxton Park intake.

In 1933, the Water department began laying ten miles of 20- and 24-inch pipe, building of diversion dams and intakes, and the construction of Crystal Creek and Catamount Dams.

From 1933 to the present, Colorado Springs has completed all development projects for supply and distribution from the eastern slopes of the Continental Divide, and is well underway on the long-range program of mastering the problems of supply from the western slopes.

The distribution of natural gas in Colorado Springs began one year after the water bond issue estab-

ON THE LEFT is Mr. M. W. Drake, Assistant Gas Superintendent of the Colorado Springs Department of Public Utilities. On the right, Mr. T. M. Hohl, Gas Superintendent of Colorado Springs.

MR. RAYMOND D. NIXON, right, is General Manager and Chief Engineer of the Department of Public Utilities of Colorado Springs.

lished water distribution. On July 11, 1879, the Colorado Springs Gas and Coke Company was formed, with permission to lay pipes and distribute illuminating gas. The early years of natural gas in the city were years of transition and growth, with the utilities held exclusively by private interests.

During the 20-year period from 1879 to 1899, community leaders in business and civic affairs risked their own capital in new and untried ventures, and starting from modest beginnings, gradually built up substantial organizations. Franchises were easily obtained and freely granted and very little thought was given to the future welfare of the city as affected by loose control of utilities. The potential value of a municiplly-owned water system was not generally recognized until near the end of this period.

From 1899 to 1925 occurred the consolidation of the several independent companies by various stages into one large corporation, controlling the entire supply of gas. The period saw the form of municipal government change twice. State regulation of public utilities became a reality, and the holding company reached the peak of its influence in utility matters in Colorado Springs, as well as in many other cities in the United States.

In 1925, the City of Colorado Springs acquired ownership of all gas facilities, and has maintained these facilities for the past 32 years. Gas distribution systems have been expanded and improved. In 1955, sales of natural gas amounted to almost eight billion cubic feet. During this same year, nearly 221,000 feet of mains were added, bringing the total of miles in service to 373.7. Over three thousand new gas services were installed, bringing the total number of gas service to 25,447.

The Colorado Springs Department of Public Utilities takes great pride in its accomplishments, and one good measuring stick of the company is the presence of sixty employees whose service to the company is 30 years or more.

JACK McCULLOUGH
Assistant
Water Superintendent
Colorado Springs
Department of
Public Utilities

A VIEW from atop the richest hill on earth, with Butte in the foreground, overshadowed by the great Continental Divide.

Butte, Montana

"The Richest Hill On Earth"

The Town That Copper Built

WAY BACK IN 1880, an enterprising young man named Marcus Daly sank a silver mine from the 60 foot to the 300 foot level in search of silver. The mine produced no silver, but it did reveal a great quantity of copper. Marcus Daly named the mine Anaconda. Today, the Anaconda Company mineral claims cover 9,400 acres of Butte Hill, known far and wide as "the richest hill on earth."

Butte, located on the western slopes of the Rockies, is the leading retail, wholesale and agricultural center of Montana, but it wasn't always that way. For years, the city had a wild and raucous reputation as "the town where anything goes."

In the late 1800's, the War of the Copper Kings got underway. Fortunes were made and lost in mining ventures and across the gaming tables. Conflicting interests battled

in court for control of ore deposits both on the surface and deep inside the earth.

Butte was a tough town in those days, and her childhood is best revealed by the following capsule history which appears on a signboard just outside the city:

"The greatest mining camp on earth built on the richest hill in the world. That hill, which has produced over two billion dollars worth of gold, copper, silver and zinc . . . was opened as a placer district in 1864. Later, Butte became a quartz mining camp, and successively opened silver, copper and zinc deposits. Butte has a most cosmopolitan population, derived from the four corners of the world. She was a bold, unashamed, rootin', tootin' . . . camp in days gone by, and still drinks her liquor straight!"

Those days are gone forever, though, for Butte has come of age. More copper and silver have been produced at Butte than at any other mining district in the world, and this "mile deep, mile high" city also claims production of 95 percent of the domestic supply of vital manganese. The signboard is a little outdated, because latest figures reveal that Butte's contribution to the world has been over three billion dollars worth of mineral wealth.

The actual "Butte Hill" embraces a highly-mineralized area roughly four miles east and west by three miles north and south. The high-grade copper veins are located in the central part of the district. Outward from the copper mines, particularly to the north and west, are the zinc mines. Important manganese ores occur within the perimeter extensions of the zinc mines.

The mineral world was startled some years back when experts predicted that Butte Hill would soon be "mined out," threatening the city with ghost status. Anaconda, however, had other plans. Thanks to new development projects, and open-pit excavation methods, there has been an upsurge in mining, and Butte continues to grow by leaps and bounds.

It is no secret that heavy industry often presents a problem in water usage and distribution, and Butte has weathered these growing pains with amazing success.

Butte is surrounded on all sides, except the northwest, by the great Continental Divide. Problems of water supply and distribution are complicated by the necessity of collecting water from several sources through rugged terrain on the headwaters of both the Missouri and Columbia River systems. There exists, within the distribution system itself, a difference in elevation of almost 1,000 feet.

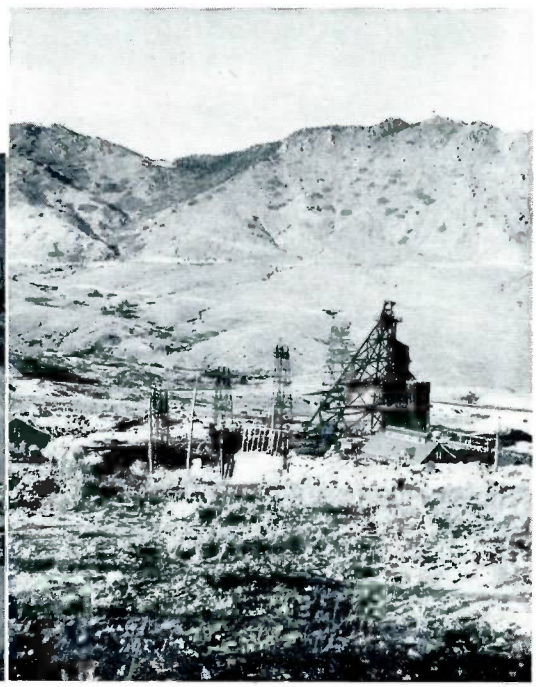
Although the supply and distribution are complicated, the quality of this healthful mountain water is excellent. It presents few problems of treatment, except for algae control during the summer months, and turbidity for a very short period during the Spring run-off.

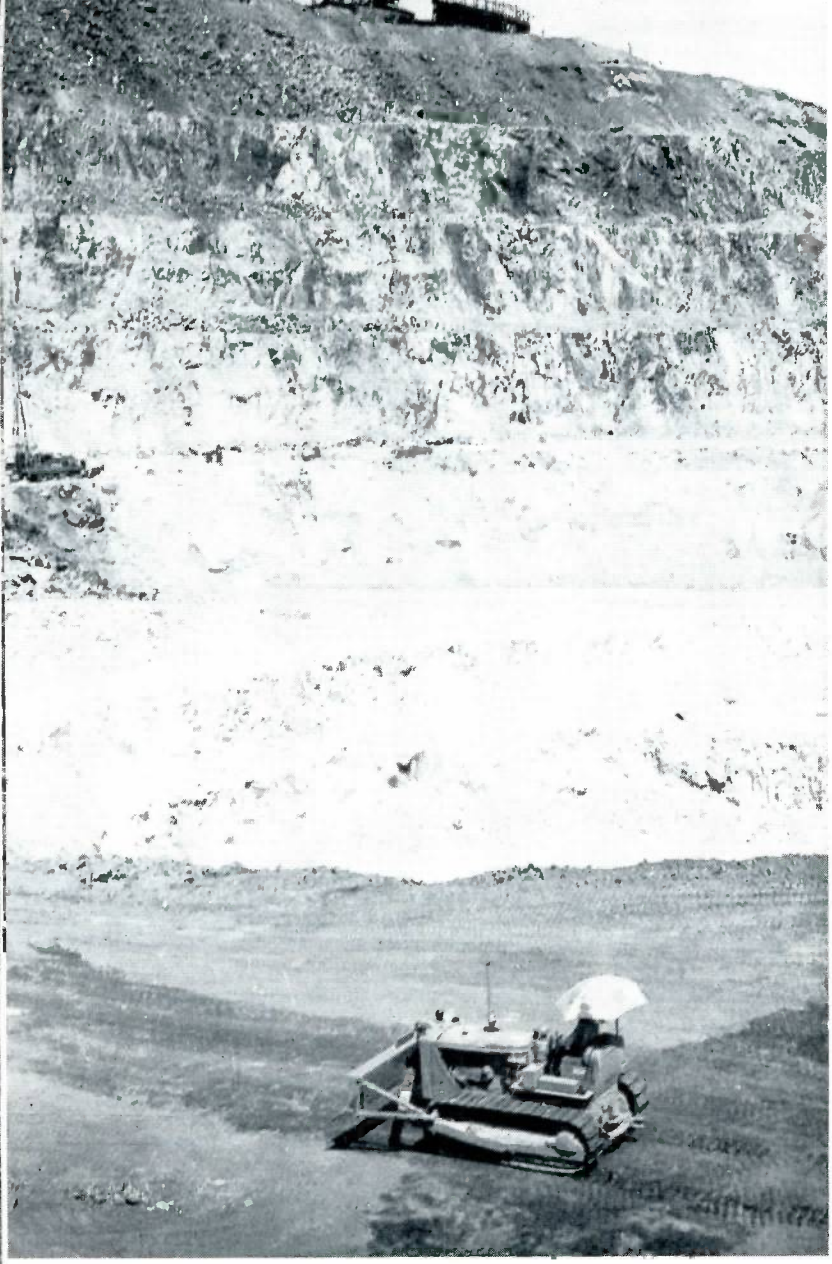
The actual sources of water supply are varied, and include: streams, storage reservoirs, run-off from the Rockies, the headwaters of the Missouri and Columbia, and the great Continental Divide. In the latter case, water is supplied to Butte by pipes operating on the gravity principle. The distribution system itself consists of seven different units, due to the great difference in elevation. The precious liquid is supplied through six reservoirs and 840,095 feet of distribution mains ranging in size up to 20 inches in diameter, and there are over 13,000 service connections.

The three major supplies are: the Basin Creek supply from the South, which is carried across the Continental Divide and stored in the Basin Creek reservoirs until further transmission by gravity; the Moulton supply from the north, which furnishes water to north Butte by gravity; and the Big Hole Supply, which travels a distance of

THIS IS one of the first copper shafts atop the hill. You are looking at the "top end" of a deep mine. The lack of activity indicates the great emphasis now placed on open-pit mining.

A BUSY DAY in the operation of an Anaconda open-pit mining operation. Notice the ridge-pattern so characteristic of this method.





A VIEW showing the depth of an open-pit mine operated by Anaconda. The crane [left center] gives an excellent idea of proportionate size. Open-pit mining was undertaken successfully following reports that Butte could be "mined-out" in a short time.

OF GREAT interest is this wooden water main, which is part of the Missoula line. The chemical composition of the soil in this region allows extensive use of wooden mains.

eighteen miles across the Continental Divide, and furnishes approximately 50 percent of Butte's water.

Recent construction includes new pumps at the system's two pumping stations, major additions to the system itself, and an infiltration gallery at the Big Hole River pumping station. Average daily consumption is 13.5 million gallons, with a maximum consumption of 22 million gallons in one day.

Naturally, the extensive mining activities in and around "the richest hill on earth" present quite a distribution problem, but the many and varied sources of supply afford unrestricted use, even though the Anaconda operations use two million cubic feet of treated water every day.

The credit for this successful distribution system is due largely to John B. Hazen, General Manager of the Butte Water Co., and Fred B. Taylor, Superintendent of the company. Mr. Hazen was graduated from Northwestern University in 1929 with a BS degree in civil engineering. He joined Anaconda in the mining engineering department in 1930, and was soon transferred to the Butte Water Co., holding the positions of engineer, superintendent, and finally, general manager. He is a past chairman of the Montana Section of the AWWA, a past national director of AWWA, and past president of the Montana Society of Engineers. He is currently a member of the Montana Stream Polution Council.

Mr. Taylor has been with the Butte Water Co. throughout his career. He started as a water boy in 1934, and worked his way up through all departments, eventually becoming Superintendent in August, 1953.

Mr. Hazen is a firm believer in public relations for the Butte Water Co. "Efficient, effective and quick service at a fair price" is his formula for a good water department public relations program. "Do a good, quick and effective job while the customer is on hand," says Hazen. "It's as simple as this: If all water department employees constantly do a good job, then relations with the public will naturally be excellent."

He also states that the water department or company must have and keep good records. This includes the location of underground facilities, equipment, etc. "When a water employee goes to do a job for a customer, he must know the exact underground location of what he is looking for. He should take adequate records with him to properly do his job, *and, above all, he should not loaf!*"

JOHN B. HAZEN

Mr. Hazen maintains that the department should keep a good service and distribution card record, should standardize on first-class equipment, and should be kept clean at all times.

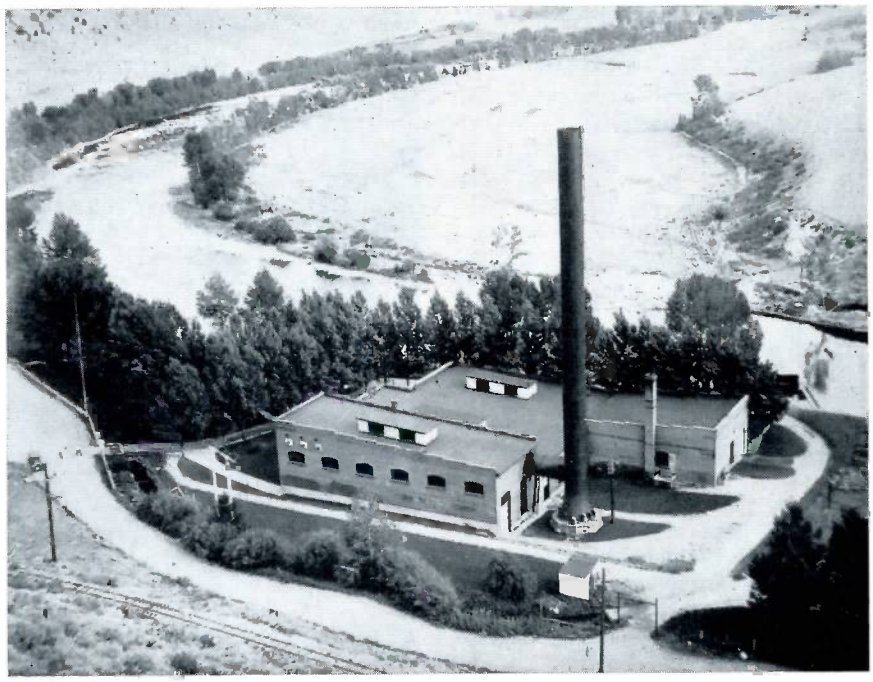
One interesting fact concerns the unusually severe winters. Due to this factor, all underground installations are at least six feet below the surface to prevent freezing.

These bitterly-cold winters also present quite a problem for the distribution of natural gas, as evidenced by the following letter from Bill Blackman, foreman of the Montana Power Company, Butte Division:

"At 10 A.M. on January 26, 1957, we were called to Anaconda (Montana) to make repairs on a broken 4" main. The break was under a large culvert which was full of ice and frozen solid. The water which normally ran through this culvert had backed up for half a block, and the escaping gas was blowing water into the air like a geyser.

"The temperature was 25 degrees minus; the ground was frozen to a depth of four and a half feet. There were 500 homes on this line, and no back feed. It was necessary to install two 4" Mueller pressure control fittings 200 feet apart, due to the fire hazard, and to install 200 feet of 4" by-pass line above the ground.

THE BIG HOLE River pumping station, located two miles above the Continental Divide. The station's capacity is 25 million gallons per day.



"Before the excavating was done and the Mueller fittings welded on, it was 4 A.M. of January 27, and the temperature was close to 40 degrees minus. It was so cold that it was almost impossible to operate the drilling machine. We had two compressors, and one froze up. We had to disconnect the air motor and thraw it out about every ten minutes. It required about two hours to tap and insert by-pass plugs on each fitting. But, at 11 A.M., after twenty-five hours of labor under the most difficult conditions one could imagine, we were on by-pass.

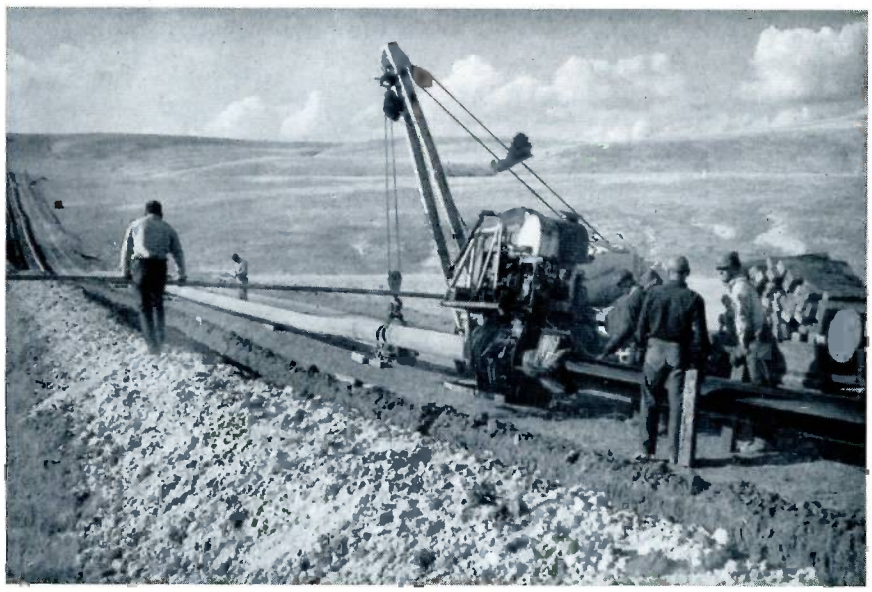
MR. FRED TAYLOR
Water Superintendent
Butte Water Co.

"The following two days, we installed new pipe and made a permanent repair. By-pass was removed and Mueller fittings plugged off. Imagine what it would have involved if we had lost this line . . . 500 homes with no heat at 40 degrees below zero!

"Since there was no possible way to install a repair clamp, the only other way besides shutting down the line, which was out of the question, was to install our Mueller control fittings. So, once again, Mueller saved the day."

A MONTANA Power Company crew working on the natural gas pipeline to Warren and Belfry. The men are dressed warmly even though the sun is shining, for the work is being done at high altitudes.

Ups and Downs of Construction



THE WARREN-BELFREY line construction at lower altitudes, indicating that the worst is over as the Montana Power crew nears its objective.

It is almost unbelievable that this Montana Power Company crew could accomplish this formidable task in such a short time, when you stop to consider the below-zero temperatures and their effect on man and machine.

This incident, however, is indicative of the fine service and "know-how" of the Montana Power Company. Founded on December 12, 1912, Montana Power now has over 45,000 natural gas customers, and provides services to over 50 communities. It is an independent, investor-owned, tax-paying utility selling electricity and natural gas in a 90,000 square mile area of the state. The population of the area is estimated at 471,000.

The company has been somewhat limited, due to restrictions on the use of gas imported from Canada. Without permits, expansion of the natural gas system to western Montana could not become a reality. On September 2, 1955, however, the Canadian Dominion Government issued the necessary export permit, and extension to Missoula, Montana, began. This western extension consists of 76 miles of 12" transmission line, and distribution systems in both Missoula and Drummond.

A. C. DUCICH

MR. DUCICH, Assistant Divisional Superintendent of the Montana Power Co., is one of many expertly trained persons in the company. His duties cover an increasing number of areas each year as the company expands its services.

Big things are happening in central Montana, also. Development of the Big Coulee gas field is expected to establish adequate reserves for other planned expansions.

In the ten year period from 1945 to 1955, 1200 new industries were added to the Company's service area, bringing the industrial service total to nearly 2500. Also, the Company added nearly 20,000 natural gas customers, and gas service was extended to 28 new towns. Expansion programs in this ten year period have resulted in the expenditure of more than $94,000,000.

Natural gas for the Company's customers comes from the Cut Bank and Dry Creek gas fields in Montana. A limited amount is being piped from Canada to serve the defense metals industry in the state. In 1952, Montana Power sold 23.26 billion cubic feet of natural gas.

As recently as 1955, the Company spent more than four million dollars on natural gas developments, including the acquisition of new land for exploration in Canada and Montana, drilling three new producing wells and one dry hole in Canada, drilling five additional storage wells in the huge Madison (Montana) project, and general expansion and development of its system.

And that's the story of Central Montana . . . a story of progress in mining, as well as water and gas distribution . . . proving that both Montana and "the richest hill on earth" have come of age.

THIS IS the Montana Power Co. gas line to Missoula. Trenches must be deep, because the ground in this area sometimes freezes to a depth of six feet.

Around The Water Industry . . . .

The year 1956 brought the waterworks industry closer to regulation by state legislatures. Although little of concrete nature was produced, a great number of states engaged in preparing master water plans, and in drafting clarifications and enlargements of existing water laws.

California, Texas, Ohio, North Carolina and Tennessee appear in the vanguard, but many other states are concerned with legislation, studies or plans to insure proper use of the water available among the rightful users of it. This concern was understandably intensified by continued drought in the central states, by advance of supplemental irrigation in the eastern states, and by the tremendous increase in industrial use of water.

In Texas, where cities in general are not so seriously short of water as are irrigators in the sustained drought, a $100 million state bond issue is proposed as a fund to finance municipal waterworks. Texas is a leader among the states with its developments of water supply by joint municipal-industrial interests, and it is among the states with the most to be gained by joint federal-local river development.

One clear characteristic of the year 1956 in the water industry was the trend toward reaching far afield for water supplies, and concentration on designing water distribution systems for the future. Water resource planners today quite generally keep their thinking geared past the year 2000, and there seems no limit on how far they can go in their plans for transmitting and distributing water.

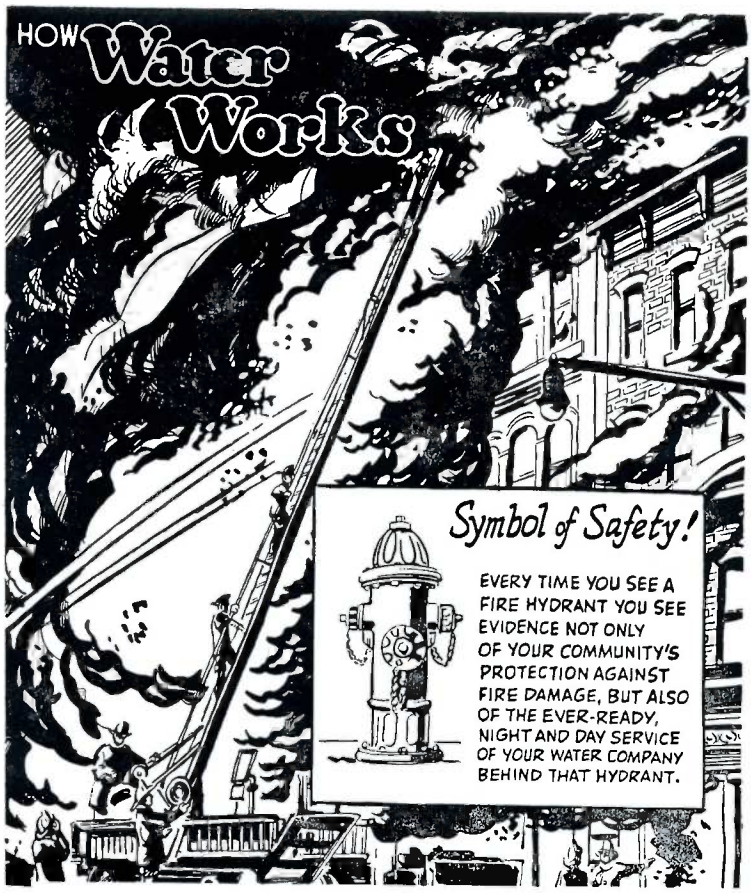
The interesting California Plan, while more for irrigation than for public water supply, is an example of how water project planning has thrust ahead. The plan calls for the transmission of water from the Oroville Dam which, when constructed, will be 400 to 500 miles from Southern California.

Denver will be stretching some 50 miles to the west for water from the Rockies' West Slope. New York, committed to supply neighboring Westchester County, now has a 44-mile West Delaware Tunnel under construction. It extends to the northwest, upstream of both the 25-mile East Delaware Tunnel and the 85-mile Delaware Aqueduct, the world's longest tunnel. Baltimore plans to go over 30 miles to the Susquehanna River for an added upland source.

In Detroit, while surrounding Wayne County has been advised to seek relatively pure water midstream in the elsewhere-polluted Detroit River, there remains under study a plan to go to Lake Huron for future water for the entire metropolitan area. In Texas, Ft. Worth plans for the long haul to go 127 miles to the northeast for water.

Quite the reverse is true in Chicago, where a plan calls for transmitting water out of the downtown source, Lake Michigan, to suburbs within a radius extending nearly 40 miles. This entails a $300 million expansion of existing facilities.

Usually the first screw that gets loose in a person's head is the one that controls the tongue.



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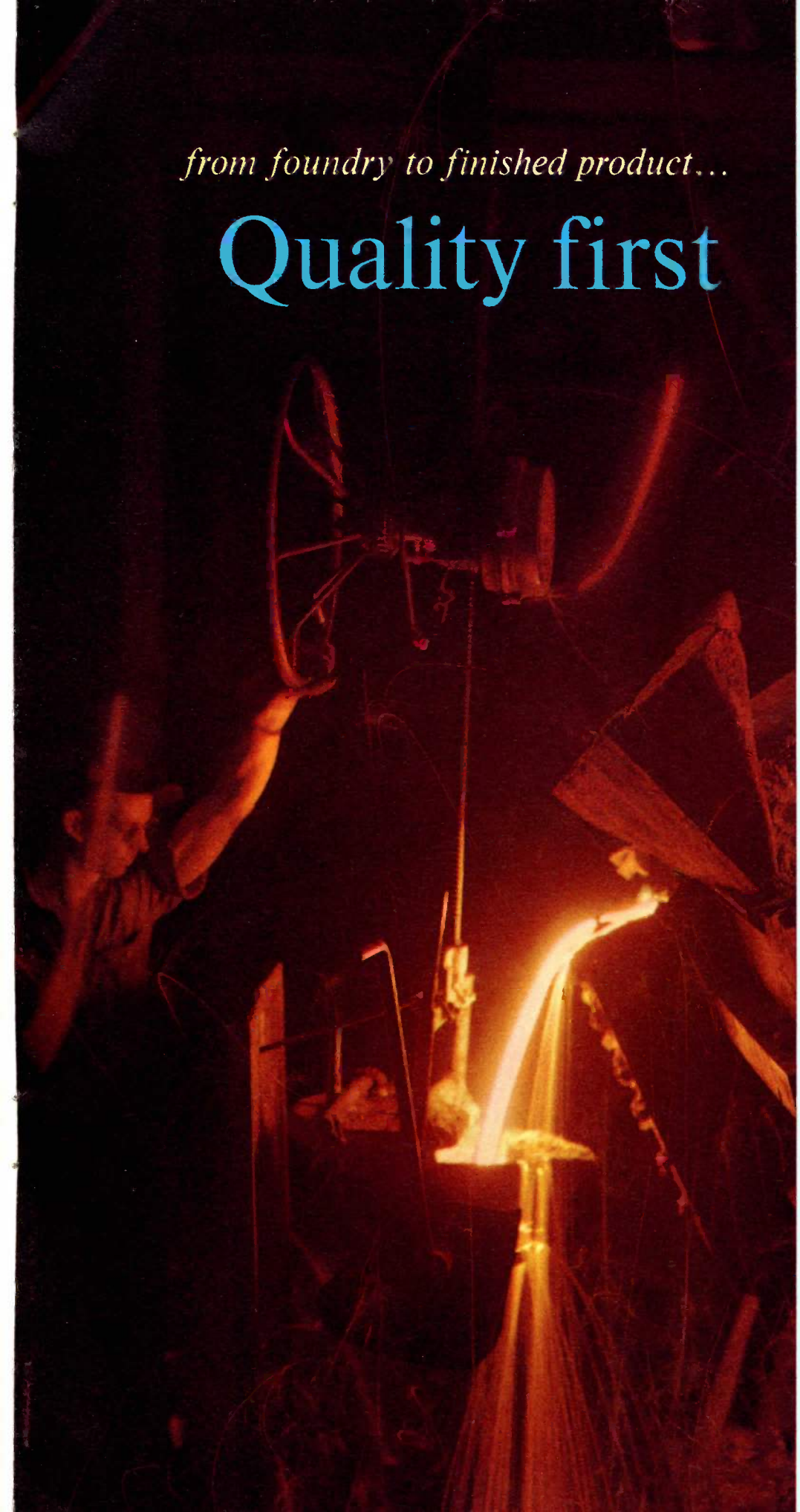
from foundry to finished product...

Quality first

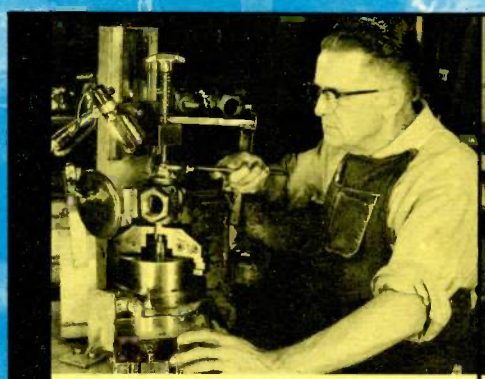


Quality, above all things, is the guide for Mueller manufacturing operations and the standard by which all Mueller products are made.

From raw materials in the foundry to final inspection before shipping, highest quality in workmanship, materials and design are united to form a superior product that will serve *dependably* through the years.

Mueller Co. was founded with a tradition of "Quality and Dependability"—a tradition that has been rigidly maintained through a century of service!

A huge vertical boring mill faces the bottom by-pass of a 30″ gate valve hub end body. Precise machinery produces precise products.



A lock nut of a Lub-O-Seal meter stop is adjusted to a specified tightness by this assemblyman using a torque gauge.

Each day, incoming raw materials are analyzed by laboratory testing to insure rigid adherence to industry standards.

Performance
in the making

Skilled Mueller craftsmen use lengthy experience, careful training and modern machine tools to produce water and gas products that give superior performance to you—the user...and their work is proved by many rigid inspections and exacting tests.

IN THE FOUNDRIES

Sands are graded, tempered and treated to assure perfect molds from patterns and core boxes fashioned by skilled artisans in the pattern shop of Mueller Co.

Six modern iron and brass foundries feed rich, creamy, carefully-analyzed molten-metal to hungry molds for castings that will become curb or corporation stop bodies, curb boxes and other Mueller products. The castings are thoroughly inspected before moving on to the modern machine shops.

IN THE MACHINE SHOPS

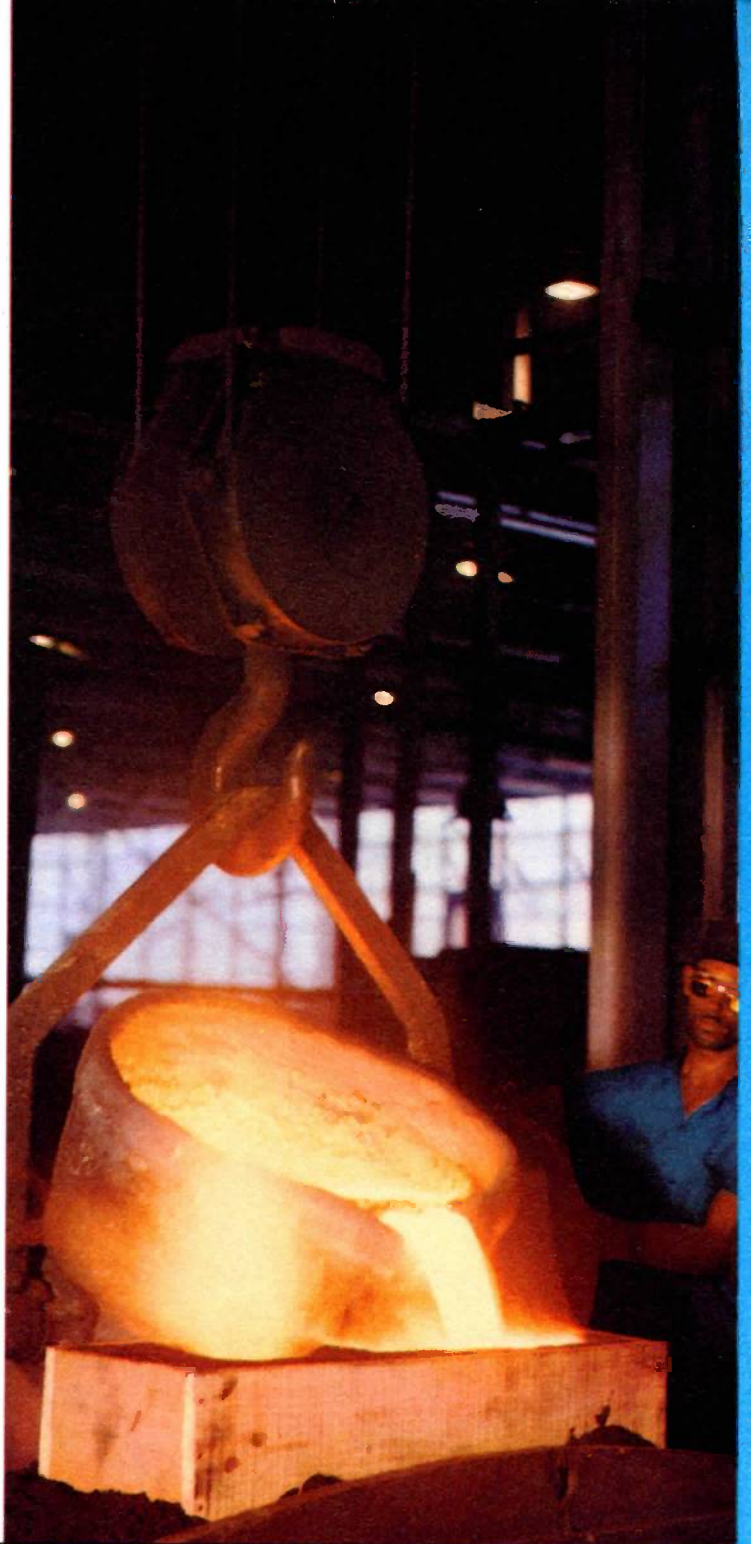
Precise machine tools, operated by expert machinists, cut, turn, bore, grind, thread and work the castings into precision parts. Extremely close tolerances insure perfect mating of component parts and long-lived operating ease.

Machined parts are inspected with precise instruments, ranging from micrometers to microscopes, to assure accuracy of each piece.

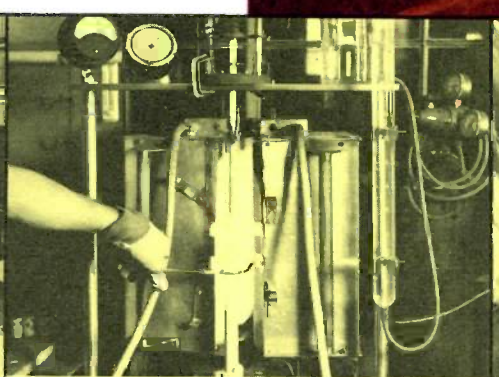
IN ASSEMBLY

Individual parts are brought together for assembling by proficient craftsmen. These men prepare the finished product to detailed specifications, with each step checked by the ever-critical inspectors, making sure that the required perfection has been attained.

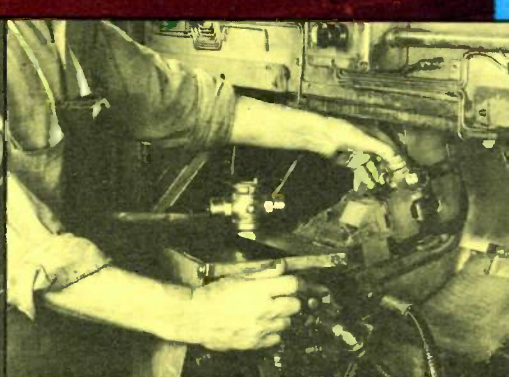
Each Mueller craftsman is instilled with the need for dependable, long-lived equipment in the essential gas and water industry...each does his part to create a product that will fulfill that need. Superior performance is the product of Mueller Co.



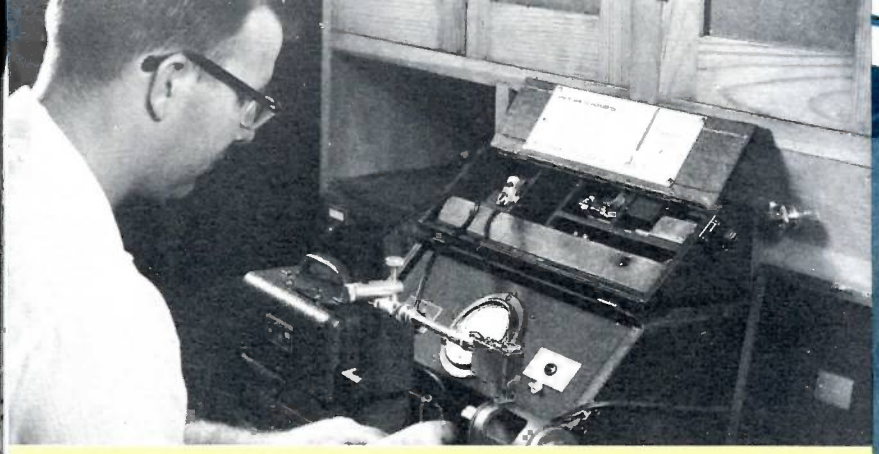
Exacting specifications are established by experienced engineers who know customer requirements and material qualities.



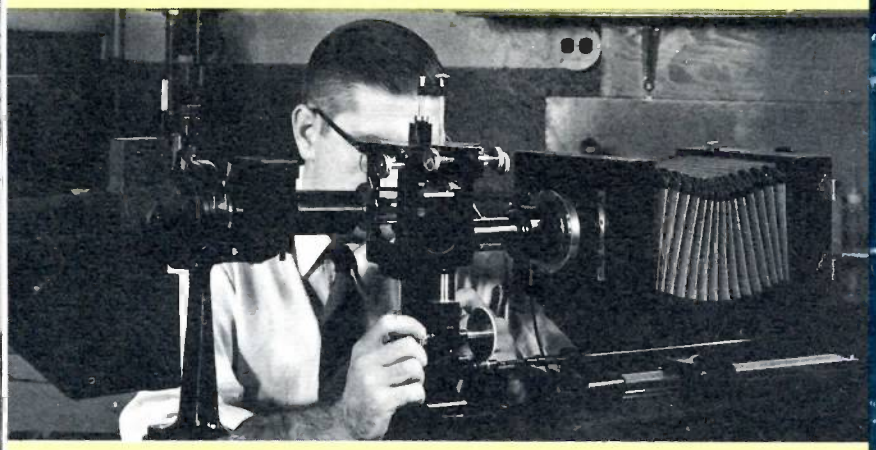
Molding sands are checked by a technician for compressive strength, permeability, moisture content and density, assuring flawless castings.



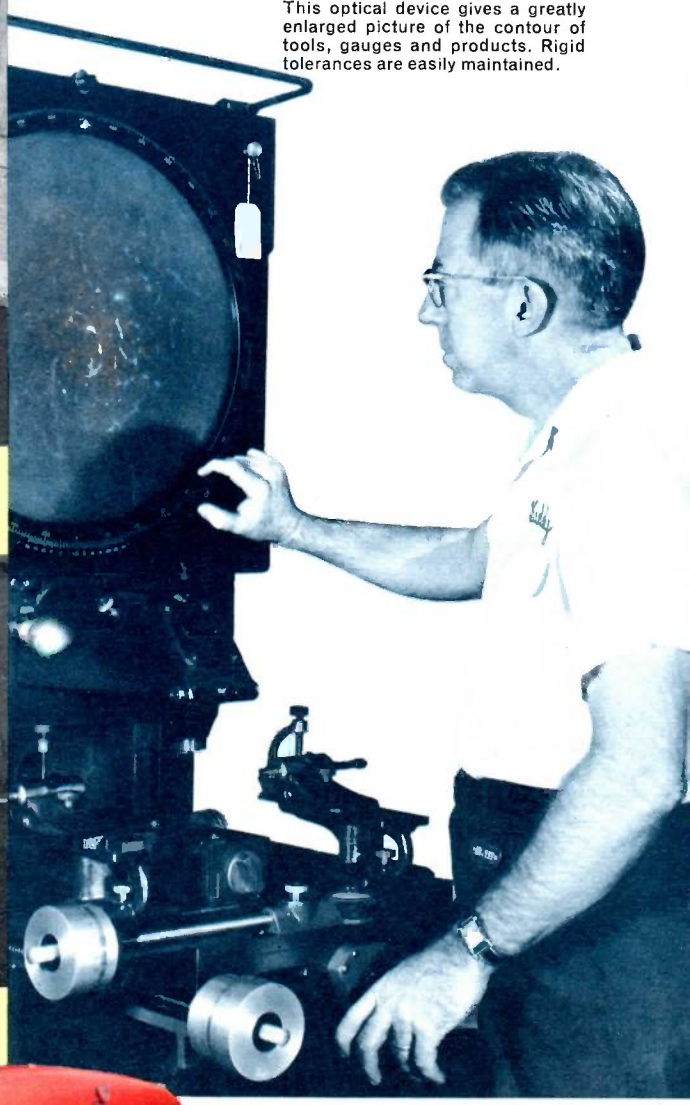
A semi-automatic machine cuts and threads both ends of a curb stop simultaneously to prevent distortion and damage.



Surface smoothness and contour is revealed by a Profilometer, a precise instrument that helps a corps of inspectors in their work.



The microstructure of raw materials and metal in products are inspected under extreme magnification in the metallograph.

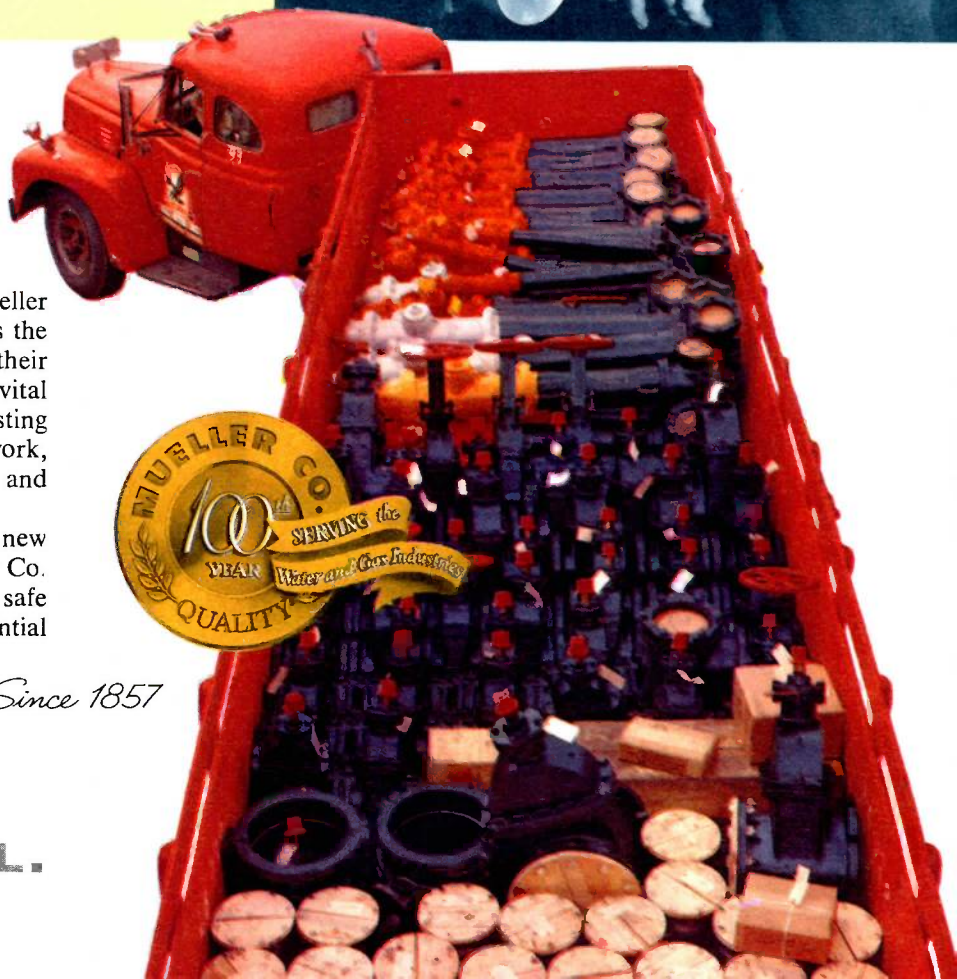


This optical device gives a greatly enlarged picture of the contour of tools, gauges and products. Rigid tolerances are easily maintained.

"Take it away!"

The call of the shipping foreman starts Mueller products to every section of the country...starts the products to work where they can prove that their built-in quality means uninterrupted service for vital gas and water industries. The efficient, long-lasting service provided by Mueller products at work, presents ample proof that quality in design and manufacture pays off:

Though new products will be developed, and new needs will arise, the quality standard of Mueller Co. will continue unchanged to assure dependable, safe and long-lived product performance for our essential water and gas industries.



Since 1857

MUELLER CO.

DECATUR, ILL.

Factories at: Decatur, Chattanooga, Los Angeles;
In Canada: Mueller, Limited, Sarnia, Ontario

Dan Gannon Appointed Field Sales Manager

Mr. Dan R. Gannon has been appointed Field Sales Manager of Mueller Co., with headquarters in Decatur, it was announced today by W. H. Hipsher, Executive Vice-President of the Company. The appointment brings Mr. Gannon from Arcadia, California, where he has been Western Sales Manager since 1955.

Mr. Gannon began his career with Mueller Co. in 1929. He joined Rockwell Mfg. Co. in 1939, but returned to Mueller Co. in 1953 in the position of Southwest Sales Manager, with headquarters in Dallas, Texas.

Mr. Gannon is married and has one child, a son. His new duties

DAN R. GANNON

will be of the same general nature as those associated with his former position, except that they cover the entire country rather than the Western Section only.

Ward DeWitt Retires After 33 Years Service

Ward L. DeWitt, Mueller Co. sales representative, has retired after more than 33 years service with the company.

He joined the firm as a sales representative November 24, 1923, in the West Coast area. He later became a branch manager of Mueller Co.'s Dallas, Texas, headquarters, and has made his home in Dallas since then.

Mr. DeWitt continued as a sales representative in the Dallas area when Mueller Co. discontinued operations of a sales office in that city.

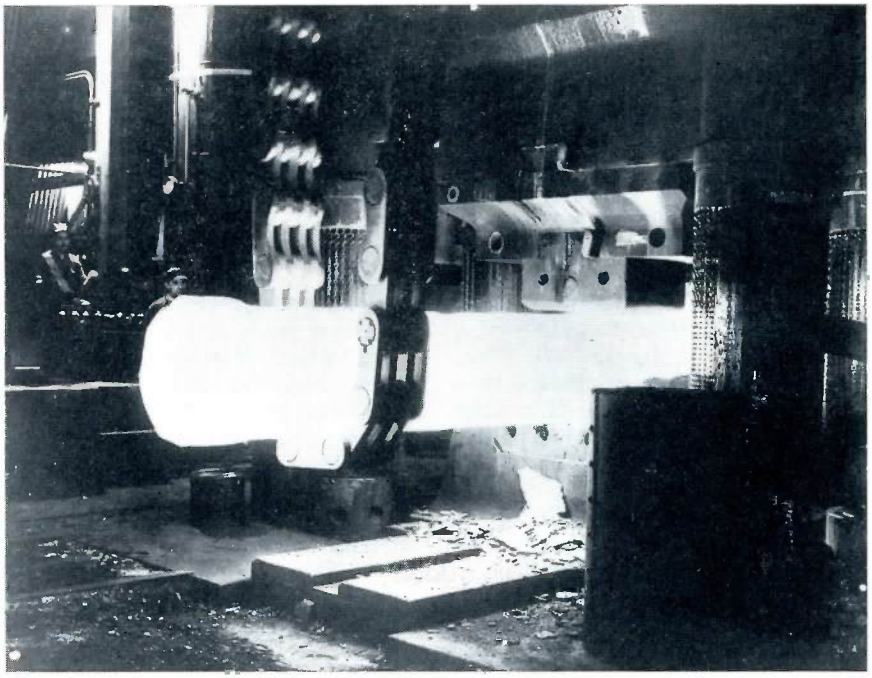
SUCCESS—Failure turned inside out.

ONE OF THE largest export shipments in recent years being loaded into boxcars at Mueller Co. in Decatur. The shipment, destined for Caracas, Venezuela via New York, contained meter yokes with brass compression stops.

FROM NORTH TO SOUTH

FROM EAST TO WEST

CREWMEN laying 24-inch pipe over hill and valley as they bring gas from deep South to New England. [Photo courtesy "Authenticated News."]



FORGING OF heavy ingot under gas heat in a Pittsburgh steel mill typifies gas use in industry. [Photo courtesy "Authenticated News"].

NATURAL GAS SERVES A NATION

EVEN BAYS and rivers pose no obstacle to men who lay natural gas pipelines across the country. [Photo courtesy "Authenticated News"].

AROUND THE GAS

NEW ENGLAND MAKES WIDE GAINS

MOVEMENT of additional supplies of natural gas into New England will help that section of the country make wide gains during the next few years, according to Harold Massey, managing director of the 600-member Gas Appliance Manufacturers Association.

In Boston to attend the annual meeting of the New England Gas Association, Mr. Massey said that the New England area has natural advantages for leadership " . . . in the amazing new home-modernization industry that already is bigger than any industry in the country except food."

"We already are participating in that industry here (in New England) through the installation of some 35,000 gas central heating systems a year in existing homes, not to mention some 10,000 systems a year in new dwellings, and it is our view that the trend will accelerate.

"In other areas, a big problem in modernization is that the home owner or tenant doesn't have room for the improvements he'd like to buy. The New Englander, however, traditionally has avoided pigeonhole-size dwellings, and this will prove a tremendous advantage to the planner of improvements. Even in the case of smaller new homes, many are designed so that expansion can be undertaken readily."

Massey said that while there are many details to be worked out before formal application is made to the Federal Power Commission, Maine and Vermont may soon have natural gas service. They would become the 47th and 48th states to receive this service.

"What this means to industry can be seen in the latest available figures on industrial gas consumption . . . a 42.8 percent climb in New England in 1955, another huge gain last year, and a steady climb right now," Massey said. "Brass, electronics, and many other industries developing in New England will be able to avoid the competitive disadvantage in fuels that section of the country experienced in certain other types of developments."

■

GAS HEATING IS POPULAR

America is going for gas heat in a big way! Currently, American homes are adopting gas central heating at the rate of approximately one million each year, according to reports from the Gas Appliance Manufacturer's Association. To date, 46 percent of the more than 49 million occupied dwelling units in the United States are heated by gas. The remainder of the home heating market is divided among oil, coal, electricity and other types of fuels.

In the realm of brand-new homes, the swing to gas is especially pronounced. Builders, alert to public preference, are now equipping seven out of ten new homes with gas wherever the fuel is available, GAMA finds.

■

SALES CLIMB HIGHER

Natural gas sales by Western Pennsylvania gas utilities in February, 1957, totalled 38,950,126,000 cubic feet, it was announced recently by the Pennsylvania Natural Gas Men's Association. February sales compared with sales of January, and February of last year, showed a healthy increase.

PEAK PRODUCTION

Natural gas production climbed to a record 10.9 trillion cubic feet last year. This peak production, however, consumed only 44 percent of the 25 trillion cubic feet added to reserves during the year through new discoveries, plus extensions and revisions of earlier estimates. The previous net production record of 10.1 trillion cubic feet was established in 1955.

Texas accounts for nearly half the nations production and reserves, followed by Louisiana, New Mexico, Kansas, Oklahoma and California. These six states represent approximately 93 percent of total reserves and 91 percent of last year's production. Pennsylvania led all states in the amount of gas held in underground storage . . . 326 billion cubic feet.

■

AGA RESEARCH BEGUN

The American Gas Association has two research projects under way, aimed at finding an economical substitute for natural gas. The purpose is to have a substitute ready if and when either the price or the availability of natural gas creates a serious problem.

The projects are: (1) A two-step approach, where a synthesis gas is made from coal, oil, or shale oil, and is then improved in heat content by a process known as methanation; and (2) Direct hydrogenation of coal into a synthetic natural gas.

William B. Tippy, president of Commonwealth Services, Inc., states that neither process can now produce gas as cheaply as natural gas, " . . . but research keeps bringing us closer to the goal."

INDUSTRY

NEW PROPANE-AIR MIXING PLANT IN GEORGIA

A two-million-dollar propane-air mixing plant, the first of its kind in the United States, has just been added to the Atlanta Gas Light Company system near Riverdale, Georgia, twelve miles south of downtown Atlanta, R. G. Tabor, president, has announced.

The unique feature of the plant is storage of liquid propane by refrigeration, rather than under pressure. By a process in which the propane acts as its own refrigerant, it is kept at a minus 46 degrees.

Although there is no new principle involved, and there have been pilot-refrigerated plants previously, the Riverdale plant is the first full operational use in the country. Because of this, there was no safety code in existence for its construction, and special research and study were required. Eventually, necessary safety precautions were worked out.

Even though Atlanta Gas Light is primarily a natural gas system, such propane-air plants are essential as a supplemental source of gas on days of peak use. Also, their use is important in maintaining the low gas rates for this area, which are among the lowest in the country. During a recent cold spell, the system set a record output of 450 million cubic feet of gas in one day.

■

CONFERENCE SCHEDULED

The thirty-fourth Mid-West Gas School and Conference will be held at Iowa State College, Ames, Iowa, September 10, 11, and 12, 1957. Headquarters for the conference will be the Sheldon-Munn Hotel, and all who plan to attend are urged to make their reservations well in advance of the conference date.

MEN OF MERIT

When it comes to saving lives, and limbs, the real heroes are the men who quietly see to it that desperate emergencies never arise. Though they may win safety awards or commendations, their greatest achievements never make news, for they are the heroes of the disasters that do not happen.

Frequently, a gas company employee does make headlines by being Johnny-on-the-spot with first aid when he chances to witness some accident on his regular rounds. More often, happily, the story is implied by brief statistics showing fewer and fewer accidents happening to workers in the gas industry.

In 1956, for the eighth year in succession, gas industry employees set a new low for accident frequency. During these eight years, they cut their injury rate by 53 percent! Even while industry as a whole has been making rapid stride in employee safety, the gas industry has pushed ahead even faster.

Such a dramatic reduction in accidents is itself far from accidental. It is the result of planned, scientific safety programs put into effect by more than two-thirds of the nation's gas companies.

Such results are not being achieved without difficulties. Unlike most other industrial workers, gas company employees often encounter hazards not directly under company control. These include such things as traffic on streets where mains are being laid or repaired; unsafe conditions in homes which meter-readers or servicemen must enter; even dogs that are inclined to bite . . . with or without barking. Existence of hazards created by "the other fellow" means that gas employees must practice safety not only for themselves, but for the other party as well. But, the records being set prove that through well-planned safety programs, success is possible.

Gas companies achieve the desired results by a number of means, such as management lectures for the employees, frequent medical examinations, improvement of working conditions, regular accident reports, and various contests. Such morale-boosting projects do more than create a group interest in keeping the ambulance away. They prove that safety isn't necessarily a grim business . . . even if it is a matter of life or death!

■

EXPANSION PERMIT SOUGHT

Cities Service Gas Company of Oklahoma City, Okla., is seeking authority to construct a 3600 horsepower addition to its Blackwell compressor station in Kay County, Okla., and to construct approximately 115.6 miles of various diameter pipelines in Montgomery, Allen, Anderson, Franklin, Miami, Johnson and Wilson Counties in Kansas.

The Company also proposes to acquire, develop and operate an underground gas storage field, known as the Vilas Storage Field, in Wilson and Neosho Counties, Kansas. Among other things, the field would have dehydration facilities for 100,000,000 cubic feet of gas per day, and 23.5 miles of various diameter field pipeline.

■

NEW HIGH IN GAS RESERVES

The greatest recorded annual increase in proved recoverable natural gas reserves in the United States was registered during 1956, according to a joint announcement by the American Gas Association and the American Petroleum Institute.

Reserves were inncreased 14.1 trillion cubic feet during 1956 to an all-time peak of 237.8 trillion cubic feet, according to A.G.A. The previous record one-year gain was 12.8 trillion cubic feet, reported at the end of 1946. The average annual increase in reserves over the past ten years has been 7.7 trillion cubic feet.

Denver Launches 15-Year Water Works Expansion Plan Costing $100 Million

by E. L. Mosley

E. L. MOSLEY

DURING the past 11 years, Denver has been one of the fastest growing cities in the United States. Present population served by its water plant is 620,000, or fifty per-cent greater than in 1945.

Current forecasts indicate that, by the end of the twentieth century, the urban population dependent upon this system for its water supply will be in excess of 1,300,-000.

Public officials of Denver have recognized, for many years past, the fact that water obtained from the original source, the South Platte River, while sufficient for initial growth, would never be enough to sustain a great metropolis. Consequently, a policy looking toward the development of water from various tributaries of the Colorado River, was adopted soon after the water plant and system became publicly-owned on November 1, 1918.

The drought of the early thirties created an immediate necessity for supplementing the South Platte River supply. This emergency condition, coupled with the existence of the pioneer bore driven under the Continental Divide in connection with the Moffat railroad tunnel, brought about actual construction work on the first stages of both the Fraser and Williams Fork units. As a result, water became available for use in Denver from the Fraser River via the Moffat Tunnel in 1936, and by exchange from the Williams Fork River via the Jones Pass Tunnel in 1940.

As presently constructed and operated, the combined average annual raw water available for Denver use from the South Platte, the Fraser and the Williams Fork Rivers totals 136,400 acre feet (44,446 million gallons).

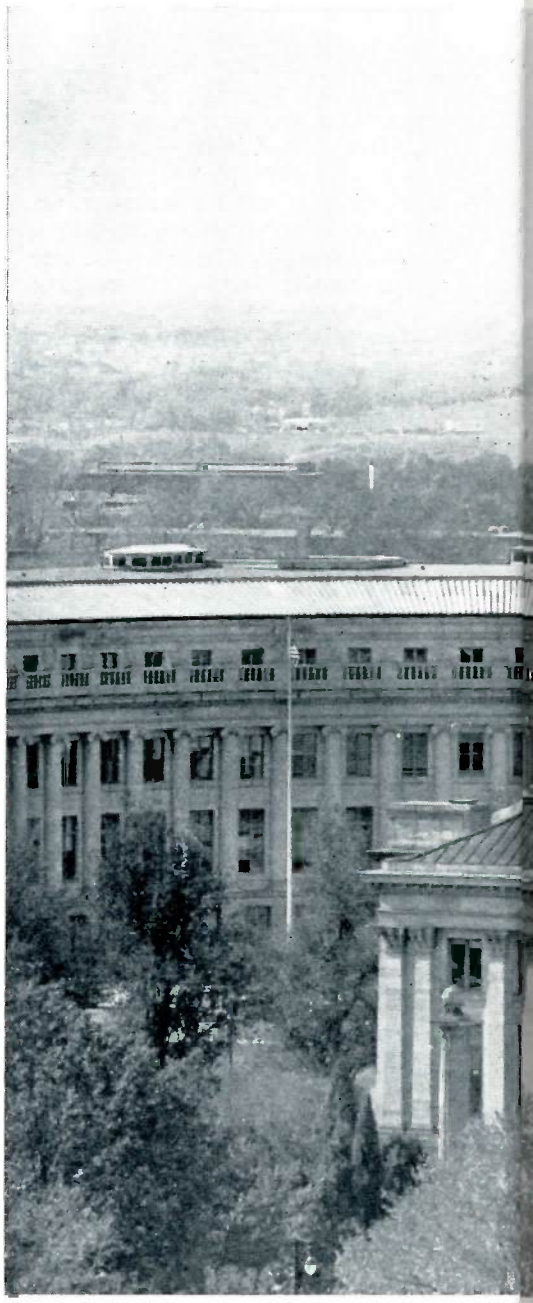
In order to meet anticipated future demands, the Denver Water Board has started construction on a fifteen-year development plan that will cost an estimated total of $101,000,000 to complete. Of this amount, approximately $80,-000,000 has been budgeted for expenditures in the first five years of the plan.

These plant additions will be paid for by the sale of general obligation bonds totalling $75,000,-000, authorized by Denver taxpayers in August, 1955, supplemented by $26,000,000 in operating revenues which will be available for that purpose, provided existing rate schedules are maintained, and the average upward trend in growth of the last fifteen years is realized.

It is proper to state at this point that the Denver water system has always paid for capital improvements and all previous bond issues out of operating revenues. Likewise, this new bond issue, principal as well as interest, will be serviced in a similar manner without recourse to tax levies.

Project planning for this large and comprehensive program has extended over a number of years, particularly in connection with the development of additional raw water supplies.

Legal, as well as engineering, problems of serious import had to be resolved before the two present and the one future Colorado River sources available to Denver could be certain of development to their



full physical extent without interfering with prior water rights controlled by others on that river. Happily, all major legal conflicts have now been amicably settled. This was accomplished by agreement between conflicting interests ....

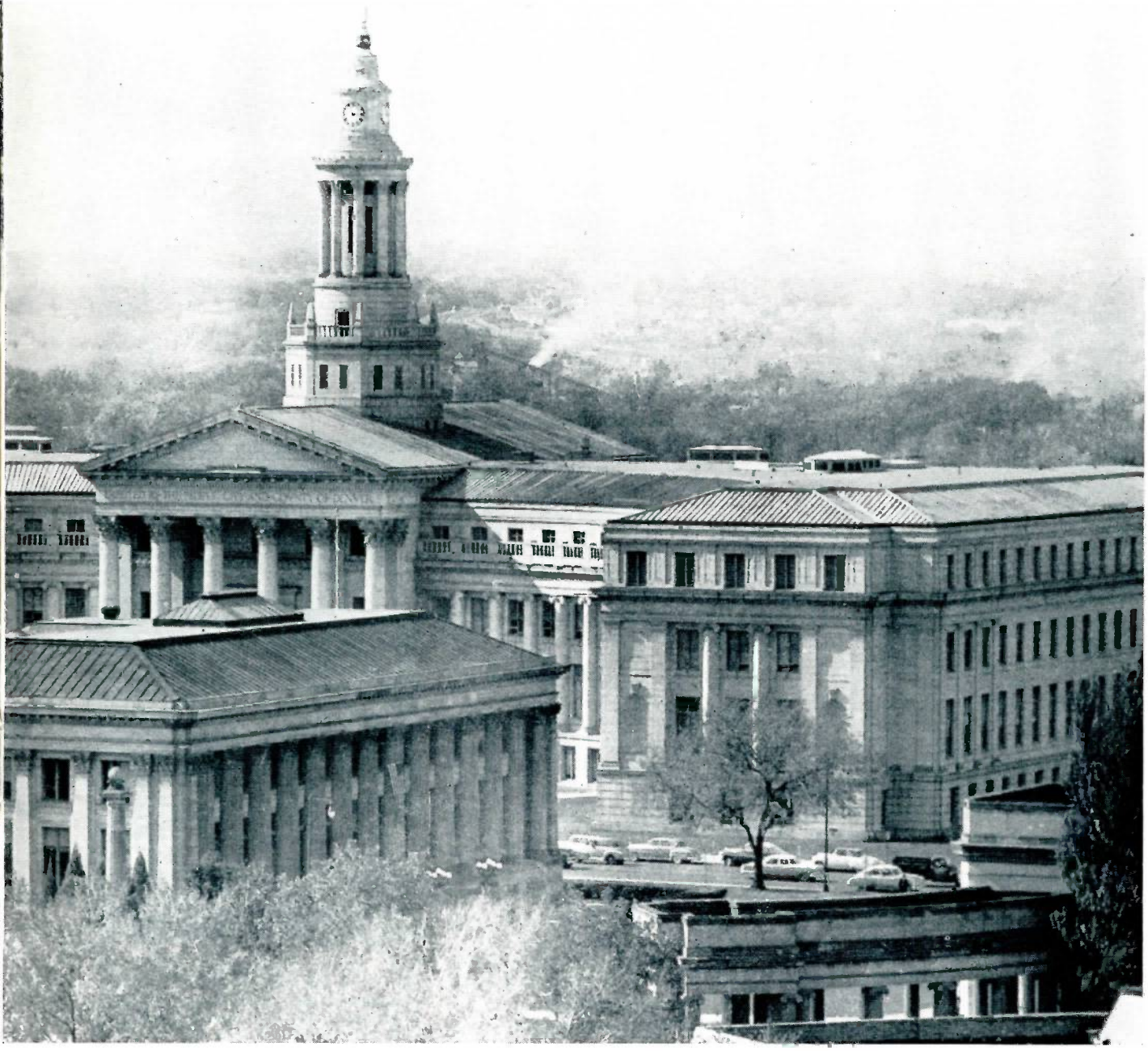
It is estimated by independent engineers that upon the completion some six years hence of the necessary facilities, Denver will then be in position to divert and use for municipal purposes an average of 147,500 acre feet of water annually from the Blue River at Dillon, Colorado.

Other projects in the program to be constructed as integral parts of the existing system, will, upon completion, be capable of yielding 81,500 acre feet of water in an average year over and above that now being utilized. This means that by the end of 1970, the surface raw water supply available for diversion annually into the Denver water system from all sources will total 365,400 acre feet (327 million gallons daily).

Blue River Unit

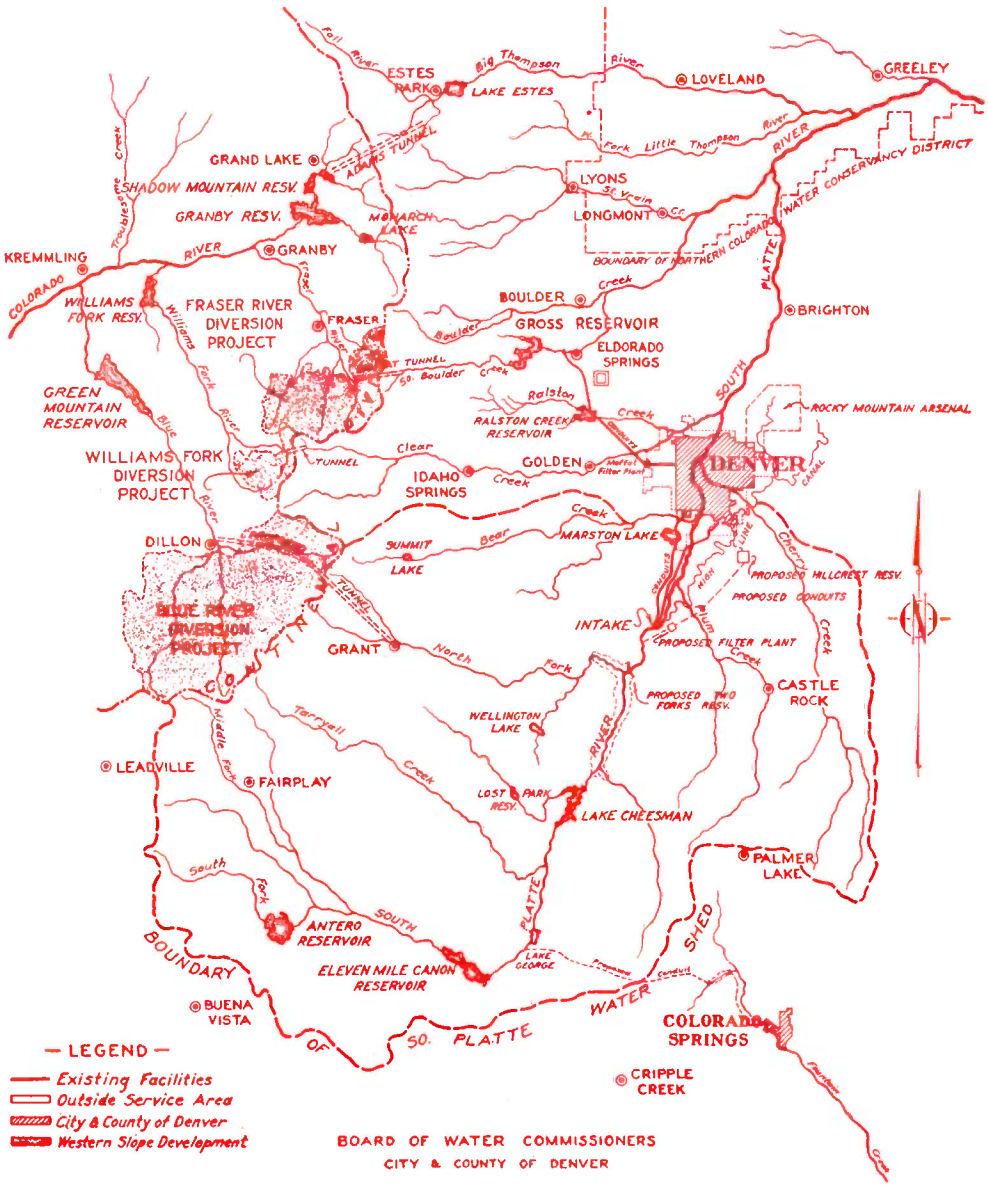
The Blue River diversion unit is the largest, in terms of both construction cost and available water supply, of any of the units included in the expansion program. It consists of three parts: (1) Dam located about one mile downstream from Dillon on the Blue River; (2) a tunnel some 23 miles in length extending under the Continental Divide from the reservoir basin

THE DENVER Public Building is one of the largest municipal buildings in the nation. The smaller building in the foreground is the new home of the Denver, Colorado, Board of Water Commissioners. [Photo by Robert W. Schott]



Present and Proposed Denver Water System

MR. DAN BLACKBURN became associated with the water works industry in 1919. He has been Purchasing Agent of the Denver Board of Water Commissioners since 1926.



MR. JOHN BURGESS, Chief Engineer of the Denver Board of Water Commissioners, joined the Board in 1933, and has held his present position since 1951.

Mr. Robert Millar, Secretary-Manager of the Denver Board of Water Commissioners, is a graduate of Cornell University. He became Secretary-Manager of the Board on March 1, 1955.

MR. ROBERT MILLAR

created by the Dillon Dam on the Blue River to a point on the North Fork of the South Platte River at Grant, Colorado; and (3) channel improvements of the North Fork between Grant and the junction of the North and South Fork of the South Platte River, a distance of about 38 miles....

Williams Fork Unit

This unit of Denver's transmountain diversion system, first put in operation during 1940, as now planned for completion can also be divided into three parts as follows: (1) Raising the present Williams Fork Dam, so that the reservoir capacity created by it will be increased from 6,623 acre feet to 93,637 acre feet; (2) Completion of the system of collection conduits, located on the headwaters of the Williams Fork River, to make possible ultimate direct diversion of water via the Jones Pass Tunnel to the full decreed amount of 620 cubic feet per second; and (3) construction of a closed conduit and tunnel connecting the east portal of the Jones Pass Tunnel, as now constructed, with Vasquez Creek of the Fraser River unit.

When this is done, the water gathered by the collection system can be routed into the municipal system via the Moffat Tunnel instead of into Clear Creek, as at present. It is of interest to note that the Williams Fork water will cross the Continental Divide three times before becoming available for municipal use....

Fraser River Unit

The scope of the work to be done under the program on this unit is limited to increasing the water-carrying capacity by: (1) Covering about 4.5 miles of concrete lined open canal, and the guniting of a short tunnel; (2) addition of a second barrel to each of two steel syphons; and (3) lining of approximately 2.5 miles in the easterly half of the Moffat Tunnel.

The construction program outlined so far in this article applies only to the diversion, collection, transmission, and to some extent, the storage of additional raw water supplies to be obtained from the headwater tributaries of the Colorado River.

Upon delivery to existing facilities controlled by Denver, located east of the Continental Divide on South Boulder Creek and on the South Platte River, the capital cost of this new supply of transmountain water will average about $280 an acre foot. Assuming a five percent annual return on this investment to cover the cost of interest and amortization, the annual cost will be $43 a million gallons.

The remainder of the program, representing about 39 percent of the total amount of money to be spent, is concerned with additions and betterments of more or less conventional municipal water facilities having to do with the transmission of raw water to purification and filter plants, its treatment here, and distribution to the customer.

The largest single unit falling in this category is a new rapid sand filter plant having an ultimate daily capacity of 200 million gallons. Its estimated cost, including the raw and clear water conduits required to serve it, is $16,240,000. The schedule for construction calls for the completion of the conduits and the first 100-mgd unit by the end of 1958, with the second unit to be added in 1969 and 1970.

In 1955, the rated daily capacity of the four filter plants now in service on the Denver system was 190 mg. Upon completion of an addition to the Moffat Tunnel in 1956, this capacity was increased to 246 mgd. Due to the exceptional quality of raw water normally delivered for filtration, these plants can, however, be successfully operated at fifty percent above that rating for long periods of time.

A diplomat is a man who can bring home the bacon without spilling the beans.

WESTERN KENTUCKY GAS

THE NEW HOME of Western Kentucky Gas Company in Owensboro, Kentucky. The building was officially dedicated on October 25, 1956. Notice the drive-in window for customer convenience.

ON THURSDAY, October 25, 1956, Mayor Casper S. Gardner of Owensboro, Kentucky, cut the ribbons and formally opened the new office building of the Western Kentucky Gas Company, thus climaxing 97 years of gas service to Kentucky residents.

The new quarters are quite a departure from the modest beginnings of the company, and the 15,000 feet of floor space increases the size over the previous quarters two-and-one-half times. Outstanding features of the new building include the "Blue Flame Room," which is a demonstration kitchen and auditorium seating 60 persons. Customers also appreciate the handy drive-in window, where they may pay their bills without leaving the car.

It was on June 1, 1860, that the Owensboro Gas Light Company came into existence. Local citizens formed a stock company for the manufacturing and vending of illuminating gas, and the sale of gas pipes and fixtures. Its capital stock was $25,000, and its right to do business was granted for 50 years. The firm continued under its original name until December 1, 1928, when it was reorganized and became known as the Owensboro Gas Company. The company continued under that name until November 1, 1945, when it merged with the Western Kentucky Gas Company, a private utility which was then in its twenty-second year in the state.

In the past few years, Western has become one of the major natural gas distribution utilities in the state. Its service area now extends across Kentucky from the Ohio River on the north to the Tennessee border on the south, and from the Blue Grass region nearly 300 miles through the state's western plains region. Initially, Western Kentucky gas had about 2,000 customers in 18 communities. Today, the company serves over 60,000 residential, commercial, and industrial users in 53 cities and towns. In addition, Western is the sole owner of Kengas, Inc., a liquified petroleum gas subsidiary having approximately 16,000 customers.

During the past ten years, Western has increased annual deliveries of natural gas to its expanding service area by more than 747 percent. In this same period, their customers have increased nearly 200 percent.

Properties of the company include 860 miles of gas mains, underground storage reservoirs at Owensboro and Kirkwood Springs, and fifteen gas appliance stores located in its service area.

Western Kentucky Gas has been cited for making a substantial contribution to the industrial development and diversification of its 26-county service area. A number of important industries have located in the area primarily because of the availability of a dependable supply of natural gas. Throughout Western's service area, 99 industries are supplied from the company's system.

IN NEW HOME

James L. Bugg, vice-president and general manager of Western Kentucky Gas, has had a long association with the natural gas industry. In 1930, he was transferred from Texas to Kentucky, and he constructed and operated gas systems at Corbin, London and Hazard. In 1938, he was made general superintendent of distribution of Western, and attained his present position in late 1942.

JAMES L. BUGG

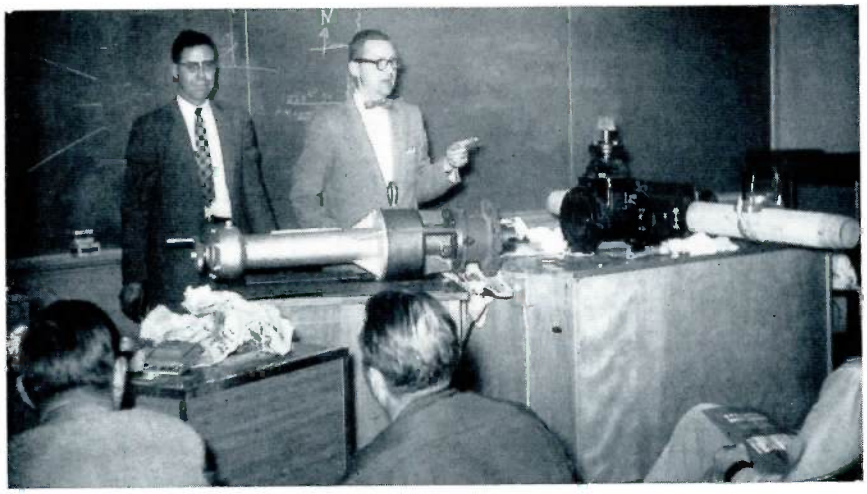
William T. Stevenson, president of Western Kentucky Gas Company, has more than 30 years experience in the natural gas industry. He was graduated from the University of Kansas, and came to Kentucky in 1929 as assistant treasurer and a director of Kentucky Natural Gas Co. Elected president of Western Kentucky Gas in 1942, he has retained that position for 15 years.

WILLIAM T. STEVENSON

Officers of the company, in addition to Mr. Stevenson and Mr. Bugg, are: D. L. Ellis, Jr., Vice-President and Treasurer; Priscilla Head, Secretary; C. E. Byron, Assistant Secretary; J. R. McCandless, Assistant Secretary and Assistant Treasurer; and V. O. Hanners, Comptroller.

Directors of Western Kentucky Gas include Mr. Stevenson, Mr. Bugg, Mr. Ellis, Mr. Byron, Thomas G. Bartlett, Marion H. Cardwell, and A. Douglas Hannah.

Another busy and energetic man with the company is Jewell Field of the meter department. To insure commercial and industrial customers of getting every cubic foot of gas they pay for, Field travels approximately 2000 miles each month. Each year he must test, and repair if needed, approximately 600 meters serving commercial and industrial users. His area is the 600 miles of loop circuit the gas properties cover.



EVERETTE A. PHILIPS, instructor, and Earl Bennett of Johns-Manville Co., making remarks after a machine demonstration at Mount San Antonio College in Pomona, California.

MUELLER MACHINES GO TO SCHOOL

IN RECENT YEARS, the American Water Works Association and various state departments of health have sponsored university courses throughout the country as an aid to men who are vitally interested in the water industry and various phases of its operation.

The Mount San Antonio College, at Pomona, California, has been offering a series of four night courses for future waterworks operators. This series has proven quite popular, and has provided excellent training for the men enrolled. These four courses covered: Applied Hydraulics of Water Distribution, Advanced Hydraulics and Water System Design, Advanced Hydraulics and Water Treatment Plant Design, and Ground Water Resources. For the past three years, the instructor in the first three courses of the series has been Mr. Everette A. Philips, Manager and Chief Engineer of the City of Pomona Water Department. Mr. Robert Thomas, District Engineer of the Division of Water Resources of the State of California is the instructor of the fourth course.

Recently, one of the lectures included a demonstration of various Mueller drilling and tapping machines. The session was devoted to the discussion of main connections and metering problems and maintenance.

Tuition for the series is free, and the college awards "certificates of achievement," as well as college credits to those completing the course.

The success of such courses has been quite evident. Many students have come from as far away as 186 miles, and 15 students travelled more than 70 miles each way to attend the Mueller demonstration.

Interest has remained at a high level, thanks to Mr. Philips' preparation and presentation, which provided a maximum of useable information in an understandable manner.

In addition to his duties as Manager and Chief Engineer of the Water Department, Mr. Philips is also Secretary of the Southern California Waterworks Group, administrative officer of the Pomona-Walnut-Rowland Joint Water Commission, and a member of the Waterworks Operators "Certification Committee" of A.W.W.A. He was graduated from the University of Iowa with a B.S. degree in Civil Engineering, and maintains membership in the American Association of Public Administrators, and associate membership in the American Society of Civil Engineers.

SO THAT'S WHAT IT IS!

A Rock Island (Ill.) newspaper recently carried a story and picture on what one of their reporters called "A new . . . saw-like valve inserting machine that saves time and money and helps foremen . . ." Here are some of the descriptive phrases used in the article:

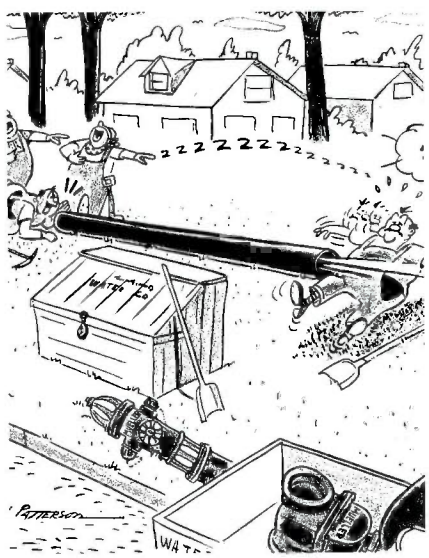
"The newly-designed machine allows workmen to cut into a water main to install an additional valve without shutting off the water in the neighborhood. This is important, since shutting off the water in a main means that there is no water available in case of fire . . . The city will use the machine to advantage in increasing the number of shut-off valves in the present water main system . . . Made by Mueller Co. of Decatur, Illinois, the valve inserting machine may be used on four, six or eight-inch mains."

ALIMONY—A method used by some women for taking the drudgery out of housework.

BRIDGE—A peculiar game in which a good deal depends upon a good deal.

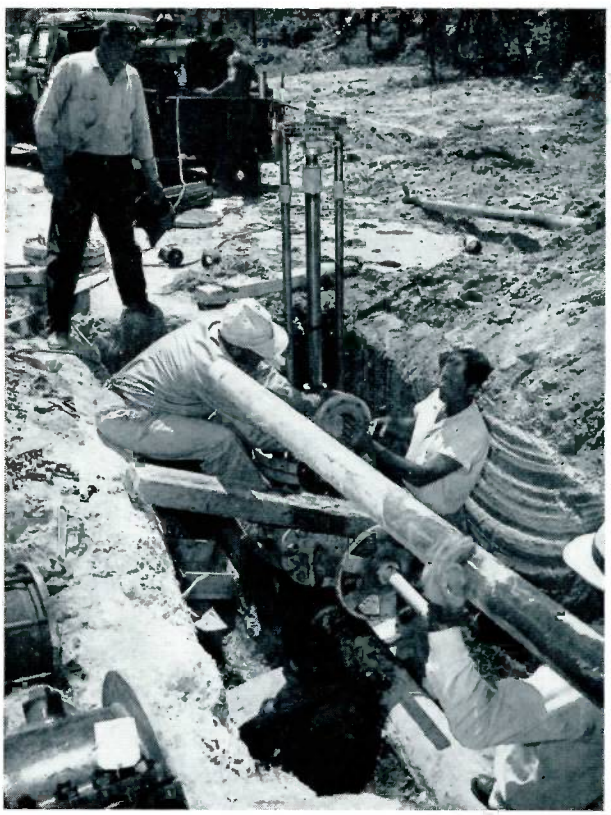
CHILD—A creature that stands about midway between an adult and the TV set.

INFLATION—A stab in the buck.



AT RIGHT, A. D. Parks, Southeast Sales Manager of Mueller Co. Seated is Jack Chepan, Mueller Service Engineer. This job involved lowering the transmission line of the Public Service Co. of North Carolina. Here the Mueller C-1 Tapping Machine goes into operation.

Public Service Co. of North Carolina Does The Job in Chapel Hill . . . .



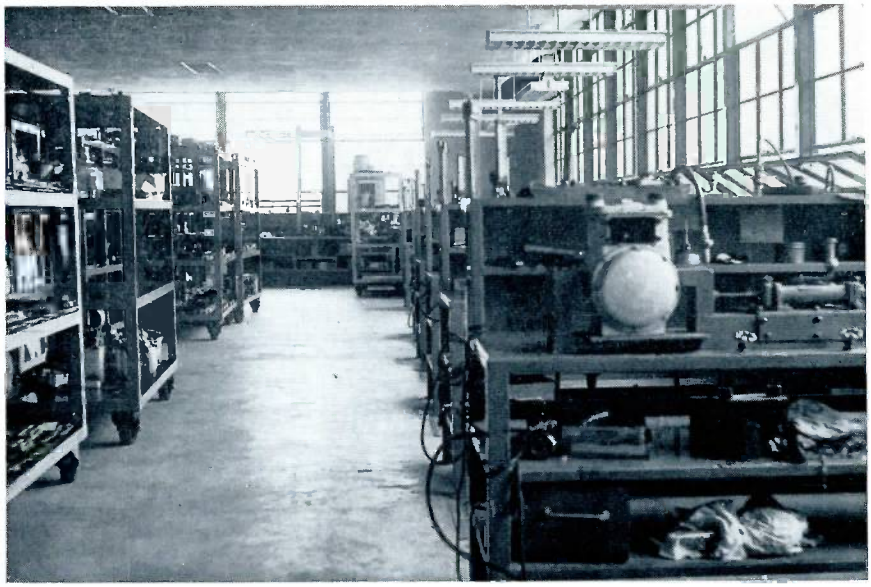
THE PUBLIC Service Co. crew gets ready to fit the bypass to the Mueller No. 4 Line Stopper equipment. The work is being done near Chapel Hill, North Carolina.

The Temperature Was Five Below

On Tuesday, January 15, the Public Service Electric and Gas Company of Summit, New Jersey, received a call about a leaking gate valve of the 1912 vintage. A company crew dug down to the valve and vented the leak into the air. During the evening, the vent pipe was knocked over and the gas ignited, sending flames 50 feet into the air. The temperature was 5 degrees below zero.

Another crew left the gas burning long enough to weld two Mueller 10″ fittings onto the main. Other Mueller equipment was brought into play, and the shut-off was completed by 6 p.m. the next evening. The crew had throttled the pressure down to one pound. They then raised the pressure to 10 pounds for the evening load, and all held satisfactorily. Since they could feed the main from both ends, no bypass was necessary; but they had to leave the stoppers in the main overnight, as the leaking gate valve could not be replaced in the evening.

About 10 a.m. the following morning, the stoppers were removed with no trouble, the completion plugs inserted with ease, and the fittings closed. The entire operation proceeded smoothly throughout, even though everything was done with the temperature well below zero. The Mueller equipment remained in top operating condition despite the rigid cold and dampness, proving once again that the "Mueller Method" is the best.



Their Motto: Cleanliness and Efficiency

Although the above picture was not directly related to the story on Colorado Springs, we include it as an after-thought to illustrate the cleanliness and efficiency of the Department of Public Utilities of the city. This is an interior shot of the Gas Meter Shop.

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THE SIX AGES of man: beef broth, ground steak, sirloin, filet mignon, ground steak, beef broth.

THE CREW goes to work on the leaking gate valve in Madison, New Jersey. The second picture shows them removing the 10-inch stopper the morning after, and the last shows the new gate valve installed and completion plug installed on fitting in foreground.