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The Johnson Valves at New Station 5

WALTER S. BURCH

In a hydro-electric development such as that at new Station 5 the installation of a stop valve between each turbine and its penstock, while not an absolute necessity, is nevertheless quite essential to the continuous and efficient operation of the station as well as to the protection of the machines, and is well worth the necessary outlay of money provided the valve when installed is effective, reliable and easily operated, and does not introduce too much friction into the pipe line or penstock.

The primary functions of such a valve are first, to enable the operators to quickly shut down a turbine in case of trouble, and second, to make it possible to completely shut off the water from any turbine for inspection or repairs without disturbing the operation of the rest of the station.

The Johnson hydraulic valve which was selected for this purpose in connection with the 16,000 H. P. turbines at Station 5, seems by reason of its peculiar construction to fulfill the above requirements better than any other valve on the market. In fact previous to its invention a few years ago by Mr. R. D. Johnson, the choice of a valve for the protection and isolation of large hydraulic turbines presented a problem for which oft times there was no adequate solution.

Of course for low heads or under conditions such as obtained at old Station 5, where each machine or group of two or three small machines

could be connected to the forebay by means of a separate penstock of moderate length, the common form of wooden or steel head-gate working up and down between guides like an ordinary window sash served the purpose fairly well and at small expense. Such gates are always placed at the top of the penstocks as they leave the forebay and operate under only a few feet of head. Even with such moderate requirements they are hardly suited for daily operation, and it is frequently deemed desirable to install some kind of a valve between the turbine and the penstock. This is especially true when more than one machine is served by one penstock.

With an arrangement such as we have in the new development at Station 5 this need becomes especially important on account of the size of the machines. Here we have a single tunnel twenty feet in diameter and 1600 feet long which divides at the lower end into 3 thirteen foot penstocks leading to the 16,000 H. P. turbines in the station. In order to shut off the water from any one of these turbines without shutting down the whole station by closing the head-gates at the tunnel in-take, it is necessary to have valves in the thirteen foot penstocks directly ahead of each turbine.

The construction and principles of operation of the Johnson valve are shown diagrammatically in Fig. 1. The valve consists essentially of a

THE DAY

BY RICHARD A. PURDY

While the World was at work with its tilling,
While the sowers were singing of peace
And the harvest, when all would be willing
That the battles of hatred should cease;
In their midst was a council debating
And in secret devising a way
To destroy with their pestilent hating;
Then they rose and drank to "The Day!"

To the day when their clutch would be certain;
To the day when their grip would be felt;
To the day when they dared lift the curtain
And their blow at the world could be dealt;
In a whisper at first and then louder,
All of Germany echoed that toast,
With a rattling of swords growing prouder;
From a thought—to a hope—then a boast!

And the hearts of her people reflected,
All the hatred her masters had bred;
Like a fever that crept and infected,
Till the soul of a nation was dead.
Then efficiency proud and defiant,
As the strange evolution began,
Was for building the form of a giant
And a monster in place of a man.

When to torture and kill would be pleasure,
Their divisions advancing would be play;
And their battles and conquests the measure
Of their joy in the toast of "The Day."
So they drank as they poured through the passes
Of the treaty-closed Belgian frontier;
And again they were lifting their glasses
When the treasures of Paris seemed near.

With an oath and a laugh came the clinking,
As the Germans with coarse brutal jeers
Heard the doomed Lusitania was sinking,
While the rest of the world was in tears.
Then a people aroused from their slumber,
Unbelieving and peaceful before,
While their ten times ten million in number
And their forty-eight states called for War!

We will answer the toast of their making;
Hand the glasses to all our Allies;
With the knees of Autocracy shaking,
Crush the Hun to the earth as we rise;
Lift aloft every glass and then drain it;
Force the Huns to drink with us and say—
"To democracy—Fight to attain it—
To democracy, Huns! To 'Our Day'."

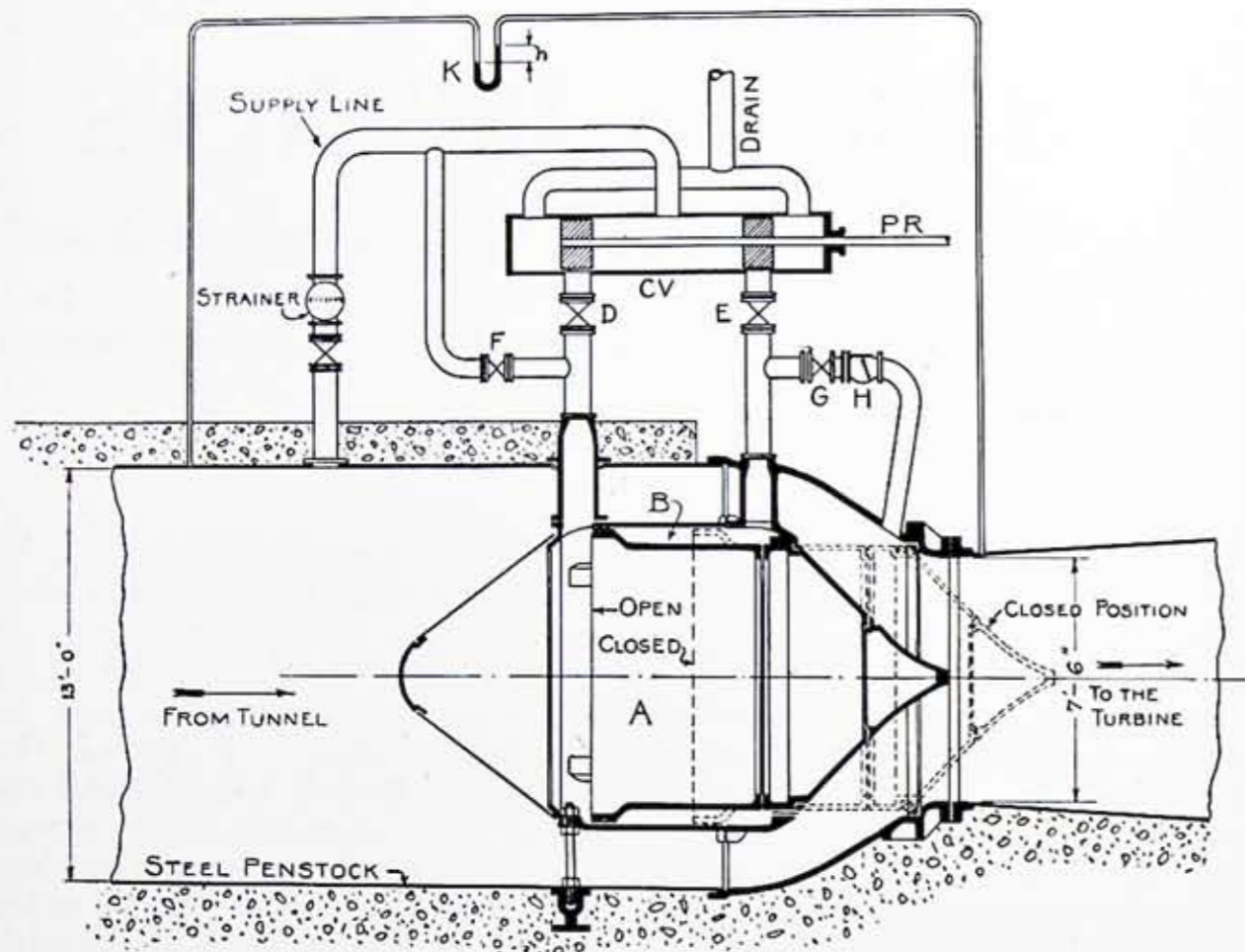


Fig. 1—Diagram of Johnson Valve.

circular body containing an internal concentric cylinder supported by ribs (not shown in the figure) and closed at one end, in which there is a differential plunger with a conical nose which seats inside the neck of the valve body. The differential plunger divides the internal cylinder into two operating chambers—a central or "closing chamber," A, and an annular or "opening chamber," B. The plunger is closed by admitting water under pressure from the penstock or other source to A and exhausting B to the atmosphere; it is opened by reversing this operation. No packing is necessary around the plunger nor are the clearances between the plunger and the internal cylinder made at all close. The supply and discharge of water to and from the operating chambers are governed by a control valve located outside the valve body. This control valve is of the balanced piston type, and as shown in Figs. 2 and 3 the piston rod is extended up to

a valve operating stand on the main floor. From Fig. 1 it will be observed that when the double piston is shifted in one direction, pipe D and chamber A are connected to the supply line and the pipe coming from chamber B is connected to the drain line, thereby causing the plunger to close, while shifting the pistons in the opposite direction will cause it to open. Connected to the differential plunger is an indicating rod which is brought out through the valve body as shown in Fig. 2. This rod is connected through a series of levers to an indicating hand on the valve stand which shows the station attendant at a glance whether the main valve is open or closed. Another indicator on the same stand shows him the exact position of the control valve.

An important feature of the Johnson valve is its ability to close automatically under certain conditions. This is inherent in the construction of the valve. The valves at Station 5

are guaranteed to close automatically when the flow of water through them exceeds by 25% the amount taken by the turbines under full load. This is accomplished as follows: In passing through the valve the water is speeded up, due to the discharge end of the valve having a smaller area than the in-take end. This means that some of the pressure head possessed by the water when it entered the valve is converted into velocity head, i. e., used up in accelerating the water. The result is a drop of pressure on the down stream nose of the plunger which unbalances it and causes it to close as fast as water is admitted to the closing chamber A. This is done

through the gate valve F which is always partially open, being properly adjusted when the valve is first put into service and then left in that position permanently. Similarly the gate valve G allows the water to be exhausted from chamber B into the low pressure area near the valve throat. The check valve H prevents water from flowing back through this pipe to the drain when the valve is closed by means of the control valve. This feature of the valve would be of great importance should a turbine casing become broken for any reason as the danger from such an occurrence is usually very great, and there is no time in which to close the valves by

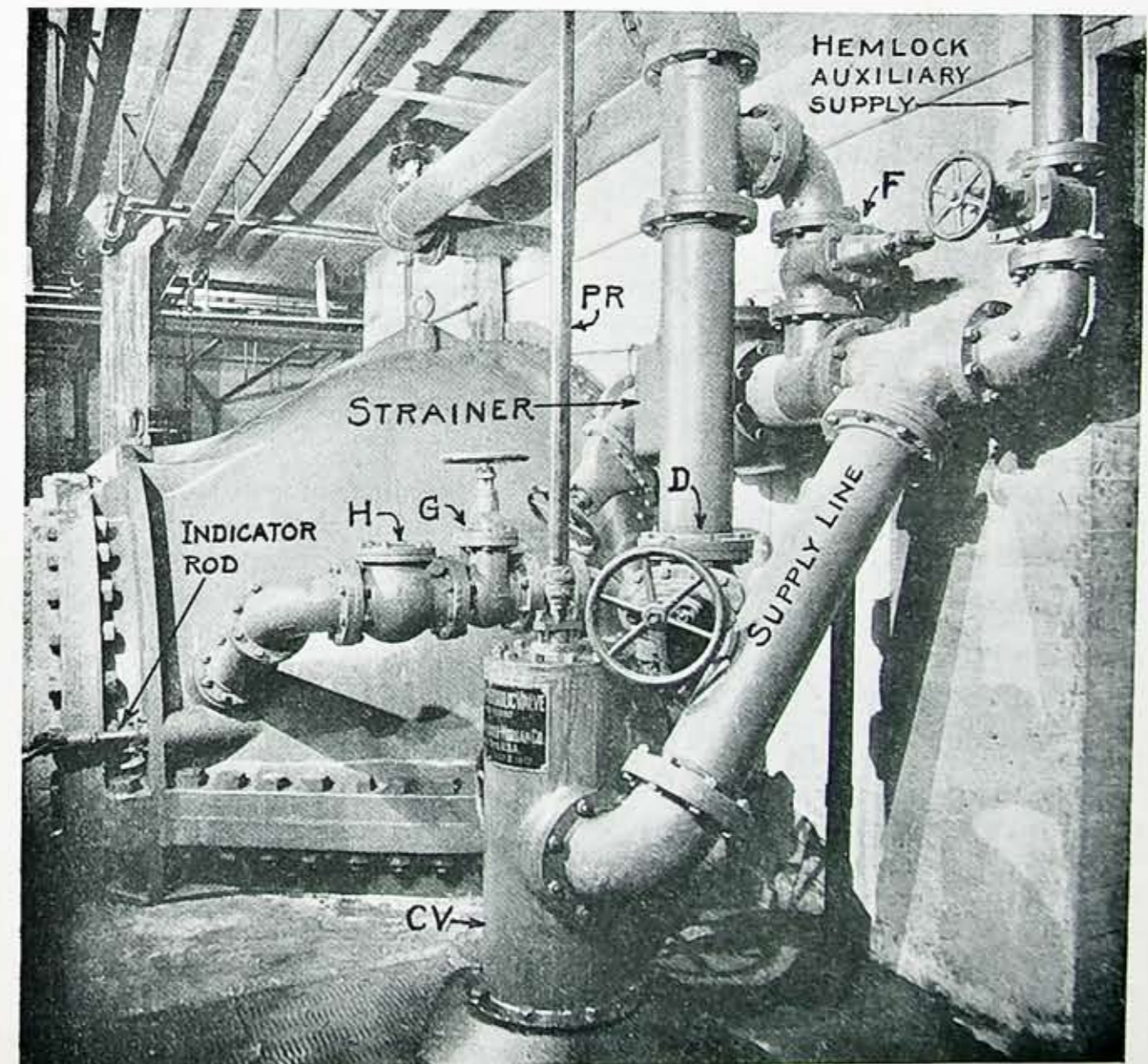


Fig. 2—Photograph of Johnson Valve and Piping. The letters have the same significance as in Fig. 1.

hand. The adjustment of the valves F and G is made such that while the main valve will close in a short time, say two or three minutes or longer, depending on the seriousness of the break, it will not close with a bang and cause a dangerous water hammer.

While the previously mentioned reasons for installing these valves are properly considered as of first importance, it is only on rare occasions that they are needed for these purposes. They have, however, certain secondary uses which are of great importance.

They are used for shutting down the machines in the ordinary course of operation when it is desired to take them off the line either for lack of water or lack of load.

The supply of water to most modern water wheels is controlled by means of so called wicket gates which are operated by the governor. When these gates are new and in good condition it is possible by closing them by hand to shut down the machine, though even at their best they will allow considerable water to leak through when they are supposed to be closed. In the course of time they become eroded by the water passing through them and the leakage becomes sufficient to keep a machine running at slow speed or even to start it from rest. In the case of the turbines at Station 5, the bearing friction after the machines are started is so low that the slight leakage through the wicket gates when new, proved to be sufficient to keep the machines running indefinitely at low speed. This necessitated considerable use of the brakes in order to shut the machines down. To save wear and tear on the brakes, the station force soon evolved the following procedure in shutting down a machine: After the switchboard operator has taken the load off of the machine and opened the oil switch connecting it to the line, the turbine operator closes the wicket gates on the turbine. He then closes

the Johnson valve which completely shuts off the water. By this time the turbine is running at a very low speed and would soon come to a stop, but to prevent injury to the Kingsbury bearing by running at low speed, the machine is brought to rest by a short application of the brakes.

It was stated above that the turbine gates erode; the water wheel also erodes. This erosion takes place faster on partial gate opening than on full. As there are months at a time when one machine is idle practically 24 hours daily, it can be seen that it is quite important to have some kind of valve ahead of the turbine which can be completely closed, saving water and erosion of gates and runner.

Another valuable feature of this type of valve is that it can be utilized as a Venturi meter. As previously pointed out the water in passing through the valve loses pressure head, which loss varies as the square of the velocity or flow. Now if a glass U tube, K, Fig. 1, partially filled with mercury be connected one leg to the 13-foot penstock and the other to the discharge end of the valve, this difference of pressure between the two ends of the valve will cause the mercury in one side of the U tube to stand higher than in the other, the difference in level, h , varying approximately as the square of the flow. If in place of the U tube we install a properly calibrated recorder such as is put out with the Venturi meter, we can get a continuous record of the water used.

This feature when installed will be very valuable as a check on the efficient utilization of the available supply of water and also as a constant indication of the condition of the turbines. As the wheels and gates of a turbine become eroded from use, the turbine will take more and more water to produce a kilowatt-hour of energy. With the Johnson valves equipped as Venturi meters, it will be possible to determine, without the inconvenience and expense of a test, just when this

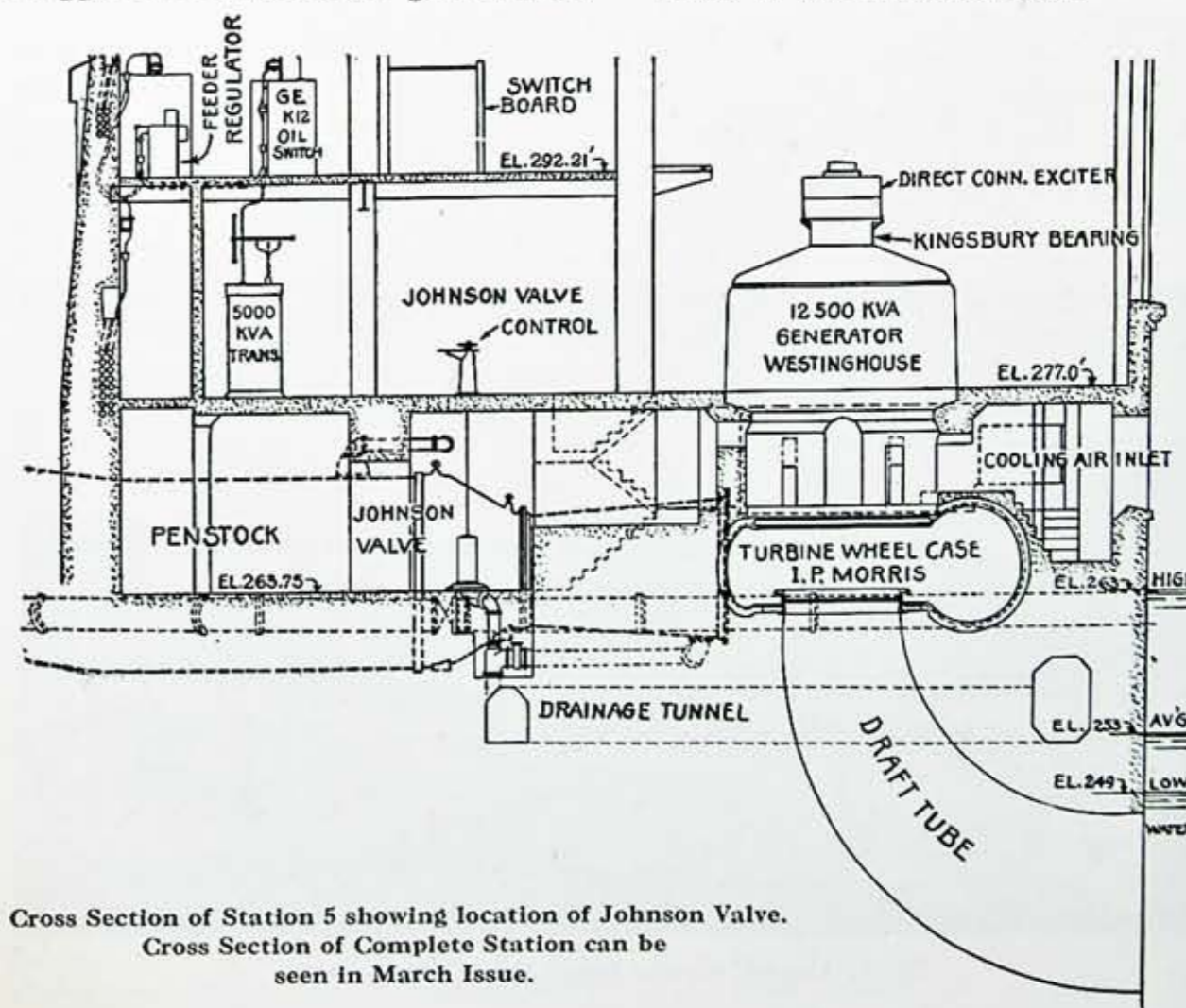
process of deterioration has reached the point where it will pay to buy new runners or gates.

The Johnson valve's great advantage over its predecessors, the gate valve and the butterfly valve, lies in the fact that it has no flat surfaces subject to enormous unbalanced pressures, which flat surfaces in the case of the gate valve must slide over each other. Its parts are all of circular cross section and therefore not subject to distortion under pressure. The gate valve is made on the same principle as the head gate previously described with the addition of a water tight casing and other refinements. Such a valve with the same $7\frac{1}{2}$ ft. minimum opening as the Johnson valves, when closed against a pressure of 55 lbs. per square inch would have a total pressure of over 350,000 pounds on one side of the gate, and to open or close the valve this gate, with this pressure on it, would have to be dragged over two narrow guides lubri-

cated with nothing but water full of grit. Tests run on one of the Johnson valves indicate that it takes little, if any more power to move its $7\frac{1}{2}$ ft. plunger than it does to move the gate of a 2-foot gate valve located near it and subjected to practically the same conditions. Needless to say the wear on the gate valve is out of all proportion to that of the Johnson valve and its chances of refusing to operate at all are much greater.

The butterfly valve, which resembles in principle the common stove-pipe damper except that it is solid, is more suited to this class of service than the gate valve. However, it is never absolutely tight, has a tendency to slam shut, and requires considerable external mechanism of a heavy character to operate it.

The Johnson valves were furnished by the Wellman-Seaver-Morgan Co. of Cleveland and were installed by Mr. Lamey's men under the supervision of the manufacturer.



Cross Section of Station 5 showing location of Johnson Valve. Cross Section of Complete Station can be seen in March Issue.

New Steam Main to Station 34

HARRY J. TAILLIE

SINCE the beginning of the war and particularly since the United States entered the conflict the business of this Company has steadily increased. Especially in gas and electric production has this been very noticeable. There is another phase of the business that has grown quite as rapidly which has not attracted as much attention. This is the steam business or steam sold to outside consumers for heating and industrial purposes, and during the winter of 1917-18 this business increased in output about twenty per cent over the previous season.

At present this Company supplies steam to more than fifty consumers many of whom are partially and some wholly engaged in the manufacture of material for our government for war purposes. Among those entirely on government work is the Bausch and Lomb Optical Company, our largest steam customer.

During the past winter approximately seventy-five per cent of Bausch and Lomb's entire consump-

tion was supplied from Station 3. This steam had to pass through a six-inch main to Station 34 and during the coldest periods the line was more than taxed to capacity.

Since that period the Bausch and Lomb Company has enlarged its plant by the addition of the new building on the east side of St. Paul Street. At present they are constructing another large addition to adjoin the one just completed. These buildings are to be furnished with heating and industrial steam by our company which will increase their total consumption about forty per cent. This increased demand will have to be taken care of at Station 3 and makes it necessary to increase the line capacity from Station 3 to Station 34.

Early in the Spring of 1918 this company began the preliminary work of estimating and laying-out of a new steam main. Early in the summer with most of the material at hand, the new construction work was begun and it is expected that the line will be completed about October 15th.

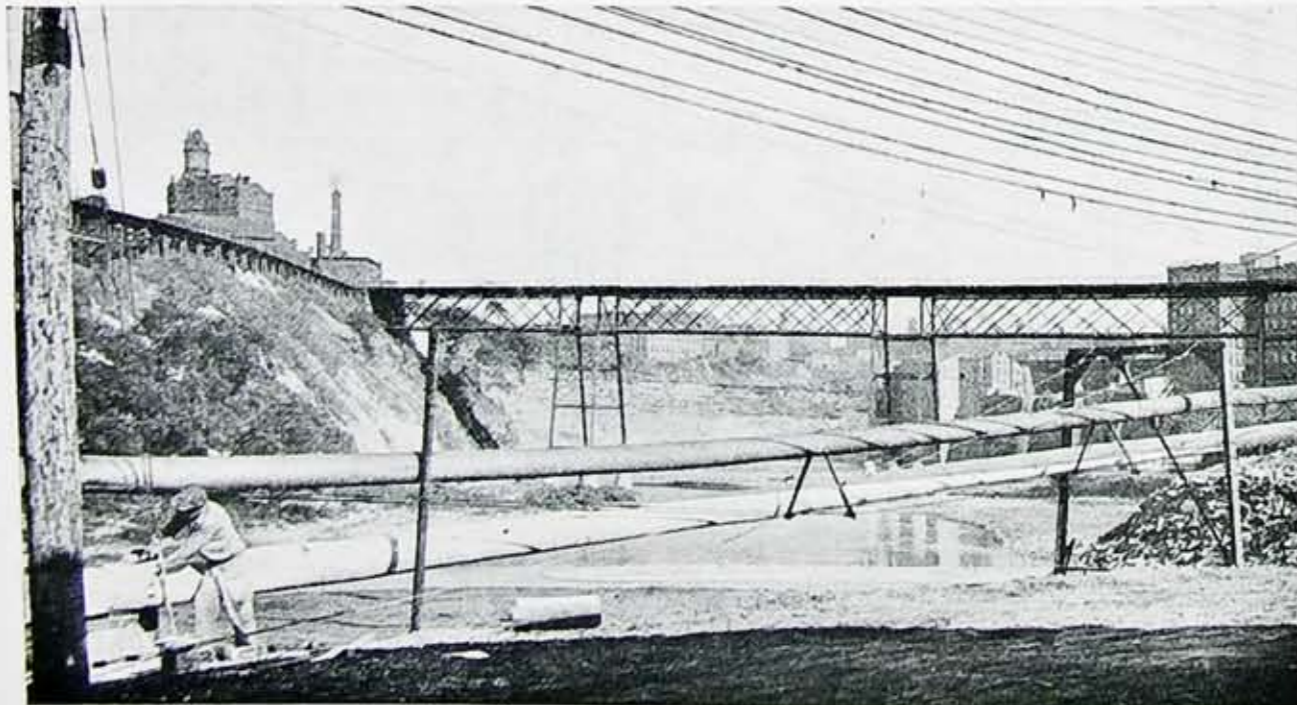


Fig. 1. General View of Steam Main Construction.

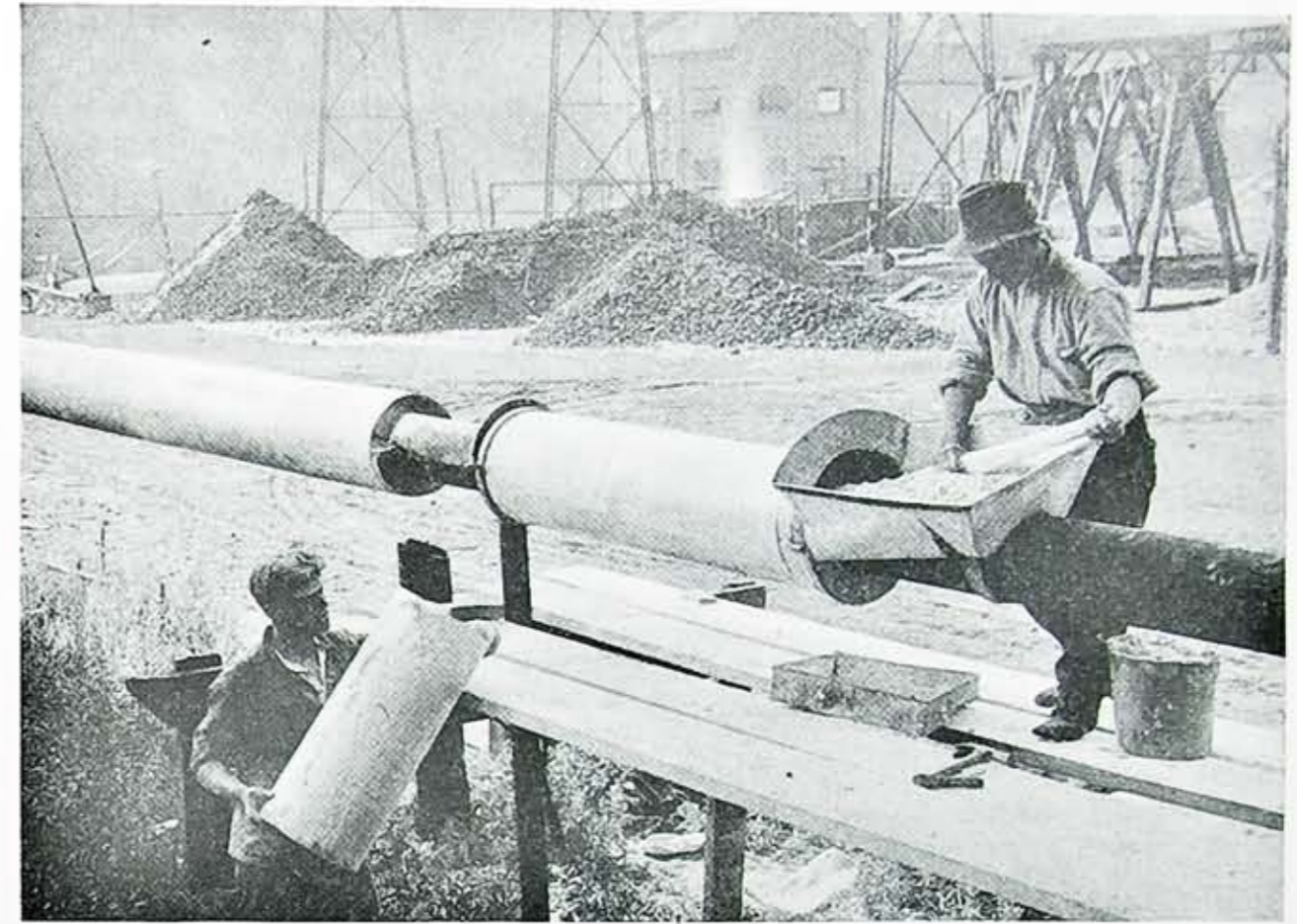


Fig. 2. View showing method of packing insulation.

This line emerges from the north end of the new boiler room at Station 3 and extends eastward to the river bank, then northward along the retaining wall of the West Gas Works to the Company bridge, crossing the river on this bridge and then eastward and up into Station 34. The total length is approximately 2,300 feet. It consists of 8" (inside diameter) steel pipe in twenty foot lengths welded together except at valves where it is flanged. The construction is overhead, the pipe being hung from frames or towers made of steel angles. The insulation consists of a 3" layer of Sil-o-cel around the pipe which is covered with galvanized sheet iron.

Asbestos-magnesium insulation is probably the most commonly used. It is made in blocks two or three feet in length moulded in semi-circular forms, two of which snugly fit and cover the pipe. This is then covered with a strong grade of canvas and held

in place with thin metal bands. When completed a tight fitting galvanized iron cover is placed over the whole to protect it against moisture and weathering. Asbestos-magnesium is a very expensive material costing about \$2.25 per lineal foot of covering as shipped from the factory.

Sil-o-cel is a mineral product and comes in the form of a powder. Its insulating qualities have been recognized for a number of years and compare equally with the asbestos-magnesium. The cost is much lower than the average insulation used on pipes and is about 1/7 of the cost of asbestos-magnesium. The reason that this material has not been used for pipe insulating is due to the difficulty in applying. It cannot be moulded into forms nor can any binding material or cement be added to it to produce this effect without destroying its essentially excellent insulating qualities. The best results are obtained when it is slightly moistened with water.



Fig. 3. Working on Scaffold.

This is the first of our steam mains to be insulated with Sil-o-cel and it was no easy matter as can be judged from the foregoing facts. After considerable experimenting, however, a method of applying this material was devised which gave entire satisfaction.

A block of wood, circular in form and tapered at the edge, was made to fit snugly into the galvanized iron covering and a hole the size of the pipe was cut into the center of it. This block was inserted in the covering at the point of beginning. A metal hopper with an opening and flange at one end was fitted into the opposite end of the covering. From the hopper the dampened Sil-o-cel was pushed in and gently tamped into place until the covering was entirely filled. It was found that too much tamping or jamming would greatly diminish its insulating qualities. The hopper was then moved back and another length of covering placed around the pipe. This was filled in the same manner and so on until a support or tower was reached. At this point the pipe was left bare, to be covered later, and a new start was made beyond the support.

Figure No. 2 illustrates this method completely, showing the fin-

ished end at one side of the support. On the other side is the block of wood held in place by the support and section of covering. The man is pushing Sil-o-cel from the hopper into the second length of covering. Another man standing below the scaffold has the next section of covering ready to place around the pipe. One end of each piece of covering tapers slightly so that all joints lap about two inches.

As this work is not entirely completed, actual costs are not available. But as such figures are always interesting the approximate costs are tabulated below and will give the reader an idea of the expense involved in this kind of work. These figures were arrived at from the sum of actual costs to date and estimated amounts of expenditure necessary to complete the work. The different phases of the work have been kept separate in accounting, the classification being as follows:

- A—Engineering and Supervision.
 - B—Supports, towers, hangers, anchors, excavation and masonry.
 - C—Piping Valves and fittings.
 - D—Lining up—welding and testing.
 - E—Insulating and covering.
- Figures are costs per lineal foot:

	Labor	Material	Total
A.....	\$0.174	\$ 0	\$0.174
B.....	.130	.391	.521
C.....	.152	1.826	1.978
D.....	.870	.304	1.174
E.....	.370	.870	1.240
Total.....	\$1.696	\$3.391	\$5.087

Company Lunch Room at West Station

Several months ago the management authorized the establishment of a permanent lunch room on the west side of the river adjacent to West Station and Station 3. The idea was the outgrowth of a commissary department which had been operated by the United Gas Improvement Com-

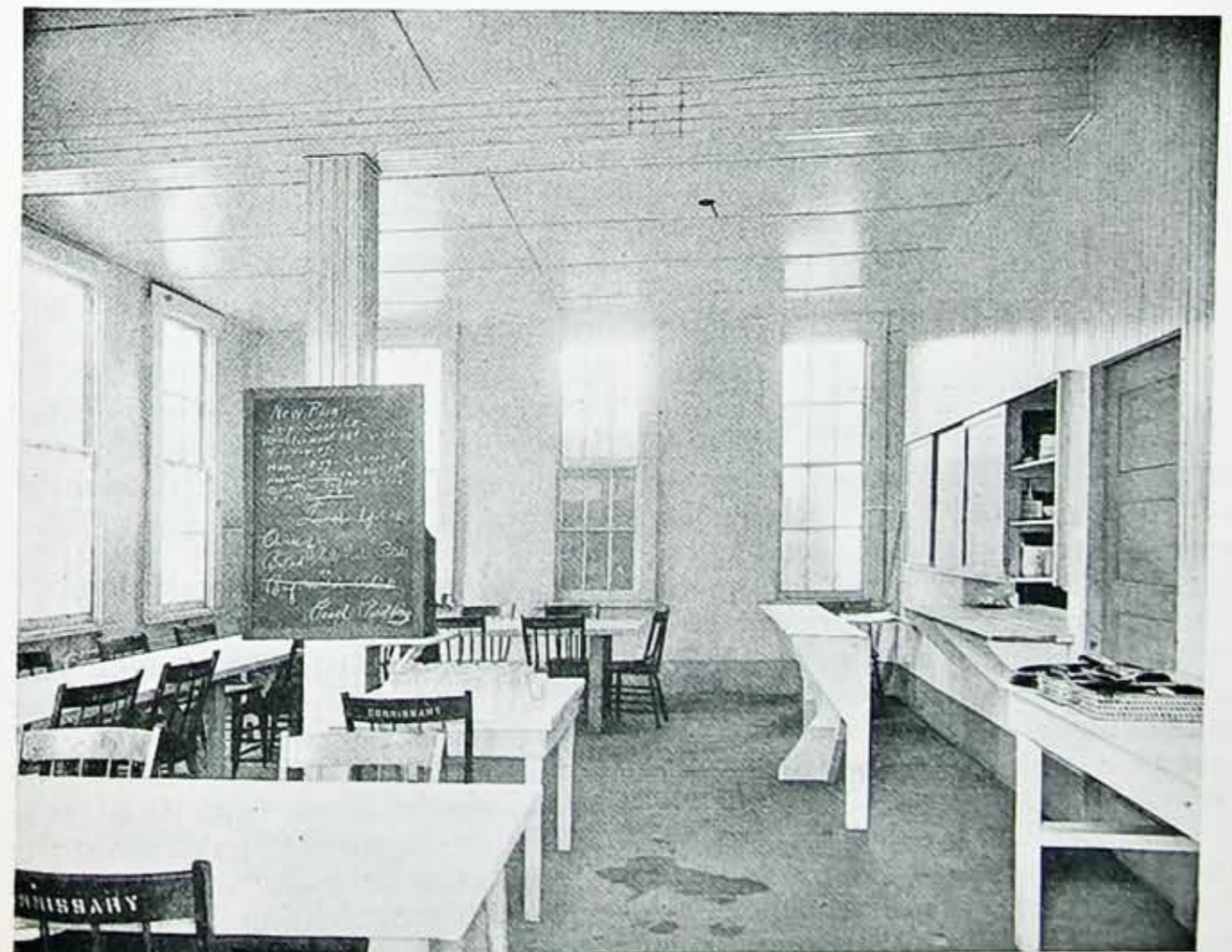
pany's men during the construction of West Station and continued by popular approval.

About August 1st renovating was started on the old stone building which had served as a construction office. The south end was partitioned off and equipped with cupboards, range, ice box and miscellaneous kitchen appliances. The remainder of the room, newly painted, ceilinged, screened and so on was equipped as the dining room. Mrs. H. F. Dresser was engaged as lunch room manager, with Mrs. Hart retained as cook.

The old plan had been to serve a meal at thirty-five cents including meat, potatoes, bread and butter and coffee or cocoa. The price proved a little too high to attract regularly the men whom the lunch room was designed to accommodate. On August 28th the policy was changed to a self-serving room on the cafeteria

plan. It is now serving an assortment of sandwiches, beverages, dessert, vegetable and one or two choices of meat and potato dinners. Prices range from ten cents for a sandwich to twenty-five cents for a meal or thirty-five cents for a complete dinner including dessert and side vegetable.

The management is backing the project as it does all projects to benefit or accommodate Company employees. There is no wish to make money, merely to cover operating expenses. The more meals to be served the easier this can be done and the better and cheaper the meals can be made. Located as it is, the room is accessible to Station 3, West Station, East Station and the Construction Department. Any Company employee is welcome. Meals are now served from 11 A. M. to 2 P. M. every day except Sunday.



The New Company Lunch Room at West Station.

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"I consider myself just as much a worker today as I was when I was driving spikes at a dollar a day in the Edgar Thomson Steel Works. When I speak of workers I mean all who work. The man who works with his hands today, and who works hard and intelligently, is the man who will be working with his brain tomorrow. For hand work well done leads to brain work."

—Charles M. Schwab.

"I Will Do" or "I Have Done!"

THERE are two distinct types of departmental or sub-departmental executive. One is never too busy to execute a request from his superior with all the promptness of which he is capable—the other procrastinates because he thinks some requests are of so little importance that they can wait for a more convenient season.

The first has learned that a business organization is basically military, that the first duty of a soldier is to obey and that he who cannot obey can never successfully command. He has

also learned that business success is most frequently attained by relieving his superior from unnecessary instructions and follow ups. He further in the majority of cases realizes that when he receives requests instead of orders, he is dealing with what has been described as "the iron hand in the velvet glove." Quite likely this prompt subordinate has never formulated these truths in words, and so too has not traced through the very desirable reaction of his conduct upon himself, or the distinctly favorable series of impressions which it has made upon his chief. He simply attempts to give that service which he instinctively knows his chief expects, *as a part of his duty to himself.* His greatest reward is in personal satisfaction, this meaning more to him than the tangible promotion which almost inevitably is accelerated by this particular trait of character.

It is not necessary to sketch the opposite characteristics of the other type. They are obvious by contrast, as is the personal loss of the procrastinator. Quite likely some of us are painfully aware of our own shortcomings.

A famous Frenchman, who in his day made the whole of Europe tremble, earned for himself this eulogy: "He never said, 'I will do,' but 'I have done.'"

Is there not need in these days for introspection in this particular, and food for reflection in the quotation?



The Irreducible Minimum

THE "Irreducible Minimum" is a scientific phrase which may well be used to refute the argument that "Accidents are bound to happen." Consider a familiar illustration in the production of power from coal. It is within the memory of us all when the return tubular boiler and the slide valve non-condensing engine consumed at least six pounds of coal per horse power hour. Improvements

culminating in the water tube boiler, the mechanical stoker, the feed water heater, the economizer and the condensing turbine of to-day, have steadily reduced the amount of coal required per horse power hour to less than two pounds. This is a reduction of more than 66%. As rational beings we know that it will never be possible to make power from coal without consuming any coal at all, but that there is an "Irreducible Minimum" attainable in our day of better than two pounds per horse power hour. Perhaps it is half a pound per horse power hour.

Now with accidents. We have witnessed in very recent years a steady reduction in accident percentages from a usual 60% to less than 15% in the most striking examples. As in the case of power from coal we know that the human race will probably never become so perfect that accidents will never happen. We do know however that with accidents there is an "Irreducible Minimum," applicable to our day and generation. Who lacks faith in human nature to say that we cannot attain it?

Just as earnest minds have produced the wonderful combination of machines which go into a modern power house, and as other earnest minds co-operate with willing hands to operate these machines with the perfection of to-day, so too, earnest minds and willing hands are reducing accidents by simply "taking pains." Are you with us in this work? Shall we make records which once were thought impossible? It can be done by individual interest and example. Do not say "Accidents are bound to happen." Say instead, "Accidents must happen less frequently." Then as humanity becomes wiser, we and those who come after us will see a constantly reducing accident rate, which, depending upon our efforts, will approach nearer and nearer that minimum beyond which due to imperfections in human nature we cannot go. The minimum for

our day is far below what we are now obtaining. Only by making "Accident Prevention" our business, are we doing our duty to advance civilization in this particular.



No More Heat, Light or Power Installation or Extensions Will be Made

The Rochester Railway and Light Company announces the discontinuance of all extensions or new installations of heat, light and power service unless such extensions or new installations are necessary to the public health, the conduct of the war, or to paramount local economic needs.

This decision was made in compliance with the request of the Capital Issues Committee of the Federal Government, placing gas and electric companies generally in the same position as telephone companies in the matter of extensions and installations of service.



Education of Foreigners, and Military Training of Young Men

Recent statutes require that all illiterate minors will be required to learn English corresponding to at least that required in a fifth grade education, and that all boys between the ages of 16 and 18 years must receive a prescribed amount of military training.

Illiterate minors, their parents or guardians and employers are jointly responsible for compliance with the requirement to learn English, and the boys concerned, together with their employers are jointly responsible for compliance with the requirement regarding military training.

The Company will naturally do its part in complying with these laws, and the employees affected are advised to ascertain their own status as promptly and completely as possible.

P. J. O'Neill Completes 25 Years With the Company



Patrick J. O'Neill

Mr. P. J. O'Neill, Assistant Superintendent of Station 3, recently completed 25 years consecutive service with the Company. For the pleasure of his many friends and for the emulation of those who are working for success, we are presenting a brief sketch of "Pat" who is still in the prime of life and fills a very important position in the Company.

Patrick J. O'Neill was born in Wexford, Ireland, on March 1st, 1865, in what had been the home of Commodore Jack Barry, father of the Navy. He came to the United States in 1882 and was employed by the Genesee Valley Manufacturing Company at Mt. Morris, N. Y., in the manufacture of the Johnsville & Bedine turbine water wheel and the Missouri grain drill. From this company he went with the Livingston Salt Works at Mt. Morris and later moved to Denver, Colorado, as an assistant in the Denver and South Park Shops of the Union Pacific Railway. Following this Mr. O'Neill was employed by the Coronado Beach Construction Company in their machine shops at Coronado Beach, San

Diego. A year later he moved further west to enter the employ of Claus Spreckels, the Sugar King, in San Francisco, with whom he stayed but a short time.

The Union Iron Works were at this time constructing the first U. S. steel cruiser, the Charleston, and Mr. O'Neill entered the employ of this company and worked on this cruiser which was afterwards lost in the Yellow Sea, China. Leaving the Union Iron Works, Mr. O'Neill came East and entered the employ of the Rochester Brewery, now the Upton Cold Storage Company and in July of 1893, became an employee of the Citizens Light & Power Co., of Rochester, which company was at that time constructing the original plant now known as Station 3.

This plant was put into operation soon after Mr. O'Neill was employed by the Company. Mr. John Almstead, now of the Domestic Sales Department, was the Superintendent and the plant force consisted of six men on three shifts. Mr. O'Neill was the night foreman and since that time has been continuously employed at and has seen the growth of this station from one having a capacity of 250 K. W. to the present plant of 60,000 K. W. capacity.

The original equipment consisted of one 250 K. W. 1000 volt A. C. water-driven generator with a steam engine as a standby. The hydraulic equipment consisted of two Pool water wheels of 500 H. P. each. The engine was a Woodbury tandem, compound, slide valve type, receiving steam from five Woodbury return tubular boilers of 250 H. P. each. The plant also contained two Western Electric open arc machines with a capacity of 50 lights each, a small A. C. switchboard and a small arc switchboard.

The night trick consisted of 13 hours 7 days per week and of the six men who originally operated the

plant, three are still Company employees, namely, Mr. John Almstead, Mr. P. J. O'Neill and Mr. George Wetzel. Two of the others are now engaged in business in Rochester, viz: Mr. Martin Bristol and Mr. P. B. Crittenden. At this time Mr. O'Neill received Nine Dollars a week as foreman of the night trick. The present station force under Mr. O'Neill's direction comprises approximately 200 working men on three shifts and operating an equipment capable of generating 46,000 K. W. continuously or 60,000 K. W. on overload.

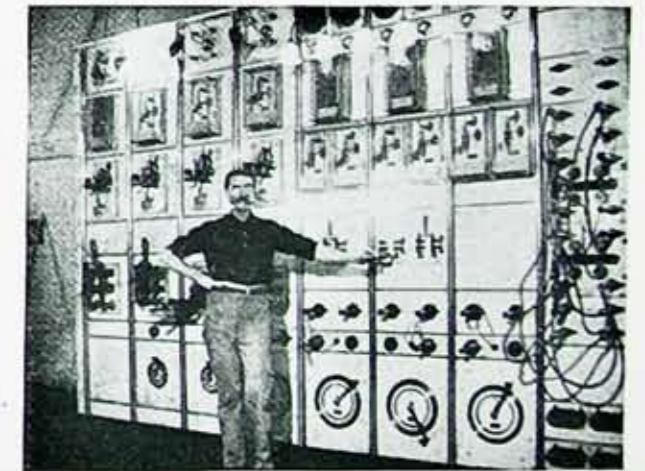
The station now contains 20 boilers, three 7500 K. W. turbines, two 10,000 K. W. turbines, one 3500 K. W. turbine and an enormous amount of auxiliary equipment such as stokers, condensers, rotaries, economizers, feed water heaters, purifying plant, etc., which were unknown when Mr. O'Neill began to learn the business.

Mr. O'Neill has seen some interesting developments in the electric art. It is a fact that the present method of synchronizing generators was developed at Station 3 in the early days through accident. The first A. C. board was a plug switchboard with nickel-plated trimmings and the floor of the station was birds-eye maple. One of the original machines in rebuilt form still does its duty in the station. The present rotary was constructed from the old Westinghouse double ended machine which was wound for 500 volts on one end and 380 volts on the other. The current from this machine was transformed up to 2200 volts, the highest in use at that time.

Mr. O'Neill took charge as night foreman on September 26th, 1893, and became foreman of the electrical machinery in 1898, Mr. Frank Ramsay being foreman of the steam machinery. Mr. O'Neill became Assistant Superintendent in 1912 and as such has charge of one of the largest, most completely equipped and most economically operated generating sta-

tions in the State. His close attention to business can be judged by the fact that only twice in 25 years has he been more than two hours distance from the station.

There is food for thought in the uncompleted career of a man who by sheer force of character has worked to this position of responsibility from humble beginnings. It is exemplified in Mr. O'Neill's statement that he does not intend to stop until he has completed another 25 years with the Company. There is also food for reflection in the fact that Mr. O'Neill has never sought a promotion but that his work has been of such a character that its merit was noticed by his superiors. Those who know "Pat" O'Neill are acquainted with his ability, his characteristic forcefulness and sincerity, and it is the wish of his many friends and associates that his ambition to spend another 25 years in the service of the Company will be realized.

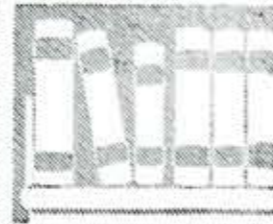


Mr. O'Neill operating original Switchboard at Station 3.

Now that the 4th Liberty Loan has been successfully put "Over the Top" do not forget to
BUY THRIFT STAMPS



Auditing



New Business

Net increase in consumers in first eight months of 1918

	Dec. 31, 1917	Aug. 31, 1918	Increase
Gas	78,657	79,057	400
Electric	27,774	28,715	941
Steam	51	55	4
Total	106,482	107,827	1,345

Net increase in consumers in twelve months ending Aug. 31st. 1918

	Aug. 31, 1917	Aug. 31, 1918	Increase
Gas	77,922	79,057	1,135
Electric	27,034	28,715	1,681
Steam	51	55	4
Total	105,007	107,827	2,820

Statement of consumers by Departments as of Aug. 31st

Aug. 31	Gas	Elec.	Steam	Total	Increase	
1908	40,018	6,261	46,279	
1909	43,651	6,954	50,605	4,326	
1910	49,608	8,247	57,855	7,250	
1911	55,226	9,973	16	65,215	7,360	
1912	59,777	12,228	19	72,024	6,809	
1913	65,101	15,194	22	80,317	8,293	
1914	68,860	17,521	30	86,411	6,094	
1915	70,639	21,048	37	91,724	5,313	
1916	73,992	24,192	41	98,225	6,501	
1917	77,922	27,034	51	105,007	6,782	
1918	79,057	28,715	55	107,827	2,820	
Inc. in	10 Yrs.	39,039	22,454	55	61,548	61,548

Net increase in consumers by months

	1916	1917	1918
Increase in January	341	194	54
Increase in February	253 (Dec.)	19	56
Increase in March	339	386	183
Increase in April	684	608	322
Increase in May	765	568	508
Increase in June	645	726	292
Increase in July	616	713 (Dec.)	53
Increase in August	777	669 (Dec.)	17
Total	4,420	3,845	1,345

Subscribers to 7% Preferred Stock

Number of Subscribers September 1	1274
Number of Subscribers October 1	1333
Number of Shares September 1	8807
Number of Shares October 1	9122

Miscellaneous Data

	Aug. 31, 1917	Aug. 31, 1918	Increase
Miles of Gas Main	445	488	43
Miles of Overhead Line	1,857	1,895	38
Miles of Underground Cable	1,076	1,135	59
Miles of Subway Duct	962	1,006	44
No. of Street Arc Lamps	1,584	1,723	139
No. of St. Inc. Lamps	8,009	8,720	711
Total No. of St. Lamps	9,593	10,443	850
No. of Employees	1,325	1,299 (Dec.)	26
Amt. of payroll (Mo.)	\$123,268.11	\$140,936.70	\$17,668.59

E. B. A. for Month of Sept. 1918

Receipts	
Bal. on hand Sept. 1st, 1918	\$1,172.31
Dues—Members	\$527.66
Dues—Company	527.66
Fees—Members	12.00
Fees—Company	12.00
Assessment No. 17—Members	.50
Assessment No. 17—Company	.50
Receipts for month of September	1,080.32
Total	\$2,252.63

Disbursements	
Sick Benefits	496.54
Accident Off Duty Benefits	28.50
Accidents On Duty Benefits	64.73
Refunded Dues Members	.64
Refunded Dues Company	.64
Medical Examiner's Exp.	67.50
Member' Military & Naval Exp.	52.17
Total Payments—September	710.72
Balance on hand October 1st, 1918	\$1,541.91

Membership	
Membership August 31, 1918	732
Affiliated Month of September	5
Terminated Month of September	22
Loss	17
Membership September 30, 1918	715

Company Participation in Fourth Liberty Loan

Dear Mr. Editor:

Inasmuch as the magazine goes to press before the final tabulations on the purchase of 4th Liberty Loan Bonds are complete, I am submitting the following very close approximation of the final result, which I am sure will be very gratifying to us all. The employees of the Company have as a whole responded nobly, and I am taking this opportunity of thanking the various committee men whose efforts have contributed so largely in the fine result.

Yours very truly, E. C. SCOBELL, Auditor.

Rochester Railway and Light Co. Fourth Liberty Loan Subscriptions

Departments	No. of Employees	No. of Subscriptions	Per Cent	Amount	Average Subscription
Executive Offices	6	6	100	\$ 2,450.00	\$408.33
Station No. 1	5	5	100	550.00	110.00
Station No. 2	6	6	100	300.00	50.00
Station No. 3 Office	6	6	100	300.00	50.00
Station No. 3 Boiler Room	38	36	95	2,900.00	80.56
Station No. 3 Construction	59	56	95	3,000.00	53.57
Station No. 3 Engine Room	35	34	97	1,900.00	55.88
Station No. 3 Steam Dist.	35	33	94	2,150.00	65.15
Station No. 3 Switchboard	10	10	100	650.00	65.00
Station No. 4	15	15	100	900.00	60.00
Station No. 5	23	23	100	3,650.00	158.70
Station No. 6	10	10	100	1,050.00	105.00
Station 26	3	3	100	300.00	100.00
Station No. 33	4	4	100	400.00	100.00
Station No. 34	3	3	100	200.00	66.67
Station No. 35	8	8	100	1,000.00	125.00
Elec. Construction, Motor Dept.	30	30	100	2,900.00	96.67
General Construction	104	96	92	6,050.00	63.02
Coke Sales	9	9	100	850.00	94.44
East Station—Gas Mfg. Dept.	59	56	95	3,600.00	64.29
West Station—Gas Mfg. Dept.	136	136	100	9,000.00	66.18
Electric Distribution	17	17	100	2,100.00	123.53
Electric Meter & Arc Lamp	39	39	100	2,400.00	61.54
Subway	18	18	100	3,000.00	166.67
Overhead Lines	28	25	90	2,050.00	82.00
Underground Lines	20	20	100	2,100.00	105.00
Gas Distribution	26	26	100	1,950.00	75.00
Gas Shop	48	48	100	2,450.00	51.04
Transportation	29	29	100	2,050.00	70.69
Auditing	20	20	100	1,700.00	85.00
Mailing	9	1	11		
Payroll	10	10	100	500.00	50.00
Janitors	5	3	60	150.00	50.00
Electrical Dept. Office	7	7	100	1,700.00	242.86
Employment Bureau	5	5	100	400.00	80.00
Stenographic	4	4	100	300.00	75.00
Industrial Sales	10	10	100	800.00	80.00
Drafting	10	9	90	650.00	72.22
Engineering	4	4	100	400.00	100.00
Purchasing	11	11	100	650.00	59.09
Storehouse	9	9	100	1,000.00	111.11
Treasury	8	7	87	1,450.00	207.14
Consumers' Ledger	135	127	94	8,500.00	66.93
Tabulating	10	10	100	600.00	60.00
Telephone	13	13	100	750.00	57.69
Domestic Sales	19	19	100	1,300.00	68.42
Safety	16	14	90	1,050.00	75.00
Laboratory	8	7	87	450.00	64.28
Total	1,142	1,097	96	\$4,550.00	77.08

Letters From Company Men in Service

Camp Dix, N. J.
July 23rd, 1918.

Dear Mr. Earl: I want to thank you for your kind letter, though I lost out at the Officers' Training Camp, I have a splendid opportunity in the Regimental Intelligence Department.

I have been assigned to Co. E, temporarily, until Washington gives me the once-over. After which I may be assigned to Headquarters if approved. In each regiment they have sixty scout snipers, who work in No-man's Land sketching all changes of the enemy lines and reporting them to Headquarters. It will be my duty to keep all their sketches, reports, copy and revise the Headquarters maps.

I am drilling every morning with the company and attending scout and snipers officers school every afternoon. We expect to go over very soon as we are drilling from four A. M. to five-thirty P. M. with a five minute rest every hour. The awkward squad resumes drill from seven-thirty until nine so you can see what we do with our spare time.

This afternoon we went out on the artillery range making road sketches and plotting hits of shells landing about 2,000 feet ahead of us. Later we have to attack the dummy trenches while the artillery lays a barrage two hundred yards ahead of our advance.

They issue our rifles tomorrow and Thursday we go on the range, if you can beat that you are going some. Friday we expect gas. I won't mind that as it will make me feel to home.

Yesterday was a real hot day. I had a slight sunstroke on the drill field and when I came to, I thought I was at the plant, as the M. D. had a bottle of NH₃ under my nose. I was all OK in an hour, but spent the rest of the morning on my bunk. Pretty soft, eh?

This is some camp, don't fly here, they jump. The officers are Regular Army men from Fort Pike, Arkansas. They treat us fine, but they know their business. I did more drilling the first day here than all the time I was at Upton.

I will say so long with best wishes to all at the plant, let me hear from you and the others.

V. T. Yours,

CHARLES R. HENRY.

C/O Co. E, 346th Infantry
Camp Dix, N. J.



Room 17, U. S. Radio School,
College Park, Md., July 30, 1918.

Dear Tom and the rest of the gang: How is everything? You see I am still here and it looks now as if I would be for about three weeks. I understand that our C. O. has decided not to send any more of his top men away until they get their commissions. I am lucky enough to

be in the top section. The war department orders that men shall not receive commissions until they have had three months service and my three months ends August 17.

The way they work it here, a student, if his grades are suitable, is invited to the office to get two applications for commission and stand a quiz. I found orders waiting my return, on July 8th, for this performance and was lucky enough to be one of the first in our section. I got my application in on the following Monday. Had to have references. Got some very good letters from Mr. Miller, Mr. Yawger, and Mr. McDowell, which I believe will help me quite a lot and for which I am much obliged.

I would like to see some of you fellows come here if you intend to enlist as I believe it is a fine opportunity.

We have been having it a little easier lately as our course is about finished. Monthly field work, setting up and operating radio stations, telephone lines, etc., and testing and trouble shooting. My official speed for receiving radio messages is 15 words per minute. More stress is laid on practical work than on operating, though everyone has to be an operator.

I think I am gaining a little in weight now and am certainly gaining in endurance. The physical exercises I suppose are responsible. The drilling has put my walking on the bum. My normal step is 40 in. and the official marching step is 30 which I found hard to negotiate at first but have finally got down to the detriment of my natural gait.

We are getting quite a plenty of rain now, sometimes in cloudbursts (almost) then a gentle shower and ever and anon the sun coming out hotter than ever. Fine corn weather and the crops look fine too.

I go out to dinner as a rule on Sunday for a change from the army grub which is good but not like home cooking.

I went out to Mount Vernon on the 20th to see the home of George Washington. I would like to describe the place but my words cannot do it. He sure had all the comforts of home for his day, and the view is magnificent up and down the Potomac river. The house is open to visitors and a lot of relics are there as well as the original furnishings which include all manner of silks and satins, a beautiful hand-carved Italian marble fireplace, several clocks, arms, etc. The walls and ceilings are frescoed by hand. If any of you get the chance it is worth a hundred of your iron men to see the place.

Washington is a fine place too for sight-seeing. We have from noon Saturday to 10:15 P. M. Sunday off, if we are good boys and not on special duty. They all line up like a flock of crows on the pike waiting for auto rides to the city. Sometimes we are lucky enough to get an auto back but generally come on the trolley.

I would like to describe some of the sets we use but is prohibited. Can say though that this school uses for a text book "Practical Wireless Telegraphy" by Elmer E. Buckner, so it is a standard and anyone contemplating coming here would profit by studying it.

They have a post laundry here and we are all having a bad time about clothes. Sent a bunch of clothes over a week ago yesterday and haven't seen them back yet, so for last Sunday had to wash out my own underwear and socks. Wouldn't mind so much if I had something else to put on but the rest is at the laundry.

I sure enjoyed my little visit with you fellows when I was home. There is another Railway & Light man here, named Roeser from the Sales Dept. I think also a fellow named Spencer, a nephew of Mr. Hollister. Perhaps you may know them.

We get the Washington evening paper at 5 o'clock every day via kid.

Say, Tom, you may as well start saving for that cigar. I haven't smoked since I came and don't guess I will.

Some of you fellows write me the news and I will try to keep you informed as to my whereabouts in case you wanted to issue a warrant.

Grub call is blowing.

Got back from mess—had macaroni and cheese (very good too) johnny cake, potatoes and stewed apricots, beets, coffee, etc. Not so bad.

Well, so long, best regards to all, especially W. J. K. S. whom I did not see July 4.

HENRY A. DAVIS.



Somewhere in France,
July 17, 1918.

Mr. MacSweeney.

Dear Sir: Thought I would drop a line and let you know I am safe in France and enjoying the best of health. Have been here three months now and very soon we will be in action, as we are fully prepared to meet any orders that may arise in the near future. Had a wonderful trip across the ocean and saw very interesting things that perhaps would be of great interest to you.

We were previously located in French barracks near the city of Angers—a very pretty place—and also a fine locality for a camp. Here we resided about a month getting the full amount of training necessary for our position in the American sector. I fully appreciate all you have done for me and I will keep you informed in regards to how I am getting along, and where I am located. Of course I miss my dear Mother and Father but I am here to see this to a finish and do my part 'till Uncle Sam overcomes his trouble over here. I suppose there are a considerable number of men leaving for training in the Army and from all indications this war has made a great impression on the American mind for preparedness, and I

really think if we realized at the beginning of this great struggle what war really meant, its continuation would be of short duration, but it is surprising the number of soldiers that Uncle Sam has sent over so far. Have lost a good many dear friends that I knew were killed in action.

Has the Railway and Light been represented on the ball field this year? I shall never forget how I enjoyed the good times we had, going from one town to another, and the successful season we had under your leadership. I understand that Sid Tirrell is in France but so far I am unable to locate him owing to the different sectors the divisions are in. Have previously been in training in the States in Oklahoma and it was with great rejoicing we heard we were going across the water. I only hope we will come back and still continue our ball team again.

Well I guess I will close. My best regards to you and also wish to be remembered to all my friends. Would dearly love to hear from you as I am lonesome sometimes. Thanking you again for your kindness to me, I remain

Your friend,

PRIVATE HAROLD F. HABEL,
110th Ammunition Train,
Medical Department,
A. P. 0711, A. E. Forces.



Co. C. 49th Engineers,
American E. F.,
Via, N. Y.

Mr. Fisher.

Dear Friend: I am now in a country where the world's most dramatic event is taking place, and I am proud to have the privilege of being one of the millions of actors taking part in this most wonderful event. The country here is beautiful but not to be compared to our U. S. I had a wonderful trip coming over considering that I fed the fishes three times. Tell our girls they needn't worry about our boys falling for the French damsels, not that they are not O. K., but the more we see of them the sweeter our own seem to us. Mr. Fisher, tell our employees in your own convincing way to give to all war activities and keep on giving until it hurts.

Having been in different cities I have visited some of the power stations and noticed the street lighting systems, but without exaggeration, I haven't seen any plant that comes anywhere near the R. R. & Lt. Co.

I am in the best of health—you have to be or they leave you behind. I miss our monthly magazine. Give my regards to all my friends, Mr. Coleman and the telephone employees. I am dropping Fred Klein a line. I hope his family are well. If you care to write, and I don't have to mention I would be pleased to hear from you, address me.

PRIVATE H. GREENBERG.

Gas and Electricity in the Home

BY THE GAS DEMONSTRATORS

Miss Frances E. Moore and Miss Irene Walsh

Home Storage of Vegetables

Never before has the subject of conservation of food assumed the importance that it has today. We have canned and dried, and now we must consider the crops which mature in our War Garden at this season. They can be preserved by storing in their natural condition for winter use.

The successful storage of vegetables is not at all difficult, in fact, good storage facilities exist in most homes, it being necessary only to make use of the cellar, the attic, a large closet or other parts of the house depending upon the character of the product to be stored.

Certain fundamental principles apply to the storage of all sorts of vegetables under a variety of conditions. The important factors to consider are ventilation, temperature and moisture. A temperature too high favors decomposition, if it is too low, freezing occurs. A dry atmosphere results in drying out and shriveling of the products, while too much moisture combined with high temperature favors the growth of destructive fungous and mold organisms. Ventilation regulates their condition and removes gaseous products that may be more or less injurious.

The greatest care in selecting and handling the material to be stored is necessary. Those that are firm, of good size and shape, in general the late-maturing sort are the most suitable. Decay begins at injured spots and bruises are serious. Over ripeness is to be avoided, it favors early decay. The ripening processes continue slowly after storage. The vegetables should be harvested when the ground is dry if possible and should be outdoors a few hours until any surface moisture has evaporated. From beets, turnips, carrots and salsify remove the tops, leaving an inch or so to pre-

vent bleeding and drying out.

In a house heated by a furnace, vegetables may be stored to good advantage, if a small room is partitioned off as far as possible from the heating plant. This room should have two outside walls and at least one window for ventilation and regulation of temperature. An earth floor is desirable as it gives off a little moisture. A concrete floor, however, can be covered with two or three inches of sand and sprinkled with water from time to time to give the needed moisture.

Wide fluctuations of temperature should be avoided. The ideal temperature is 40° F. but the roots will be safe anywhere between 32° and 50°. Proper ventilation may be had by fitting in the lower pane of the window a stove pipe with a damper and an elbow for the entrance of the cold air and in place of the pane of glass removed from the upper sash, a hinged door which when open allows the heated air to escape. In cold weather both the hinged door and the damper must be closed.

Barrels, crates, boxes or bins may be used as containers for the various vegetables but movable containers are preferable to built-in bins as it is possible to remove them for cleaning. It is advisable to construct shelves or a slat floor to keep the crates, boxes, baskets and other containers off the ground. This is desirable to insure a free circulation of air and to prevent the containers from harboring mice and rats.

If you have raised a surplus crop of potatoes in your garden, save as many as possible for winter use. If you have none of your own raising, it is well to buy them early in fall at the time of greatest supply and lowest prices and store them for winter use. Before they are stored they should be

allowed to dry. Dig them on a bright day and allow them to lie alongside the rows for a few hours. In storing potatoes remember the purpose is to protect them from great changes of temperature and from light. Even a small amount of light changes their food value. There should be enough moisture to keep the potatoes from wilting, but not enough to cause moisture to gather on the surface. Provision should be made to permit free circulation of air through the container. This may be done by boring holes in sides and bottom. Do not have one large bin for potatoes as those in the center will be subjected to too high temperature which will cause all of them to go through a sweating process. Open bins, not more than a foot deep, arranged as a shelf are best.

The root crops such as carrots, beets, celeriac, parsnips, turnips, while they are well enough off in the cellar room in crates or in boxes, require more moisture and are usually better packed away in boxes of earth or sand. This should be done as soon after harvesting as possible to allow no time for wilting, and at least an inch of stem should be left when the tops are cut off.

The cellar room will answer the purpose for storing onions if they are not placed on the floor but hung from the rafters or removed from all possible dampness. Keep them in trays or baskets which allow the air to circulate. Onions are not damaged by temperatures slightly below freezing and the attic is better than the cellar for storing them.

Dry beans, sweet potatoes, squashes and pumpkins in a limited way may be stored on a shelf in a furnace room, or in a warm place where they may be kept dry and free from moisture. In order to insure squashes and pumpkins keeping satisfactorily they should be harvested with the whole stem and part of the vine attached—otherwise, they are likely to start decaying at the stem end.

Celery, leek and chicory may be transplanted in a small way in a box with holes in it for ventilation and the roots covered with moist sand or soil, the air being allowed to circulate through the top. Watering will be frequently necessary and should be applied to the roots and not the tops. Otherwise disease is liable to start and they decay.

Conditions suitable for the keeping of potatoes answer fairly well for apples. The one essential is that the fruit be kept in a cool, dry place and so placed as to be in no danger of absorbing odors from vegetables stored nearby. Apples absorb odors freely from potatoes, onions, turnips and other vegetables. The best results are secured by wrapping each apple in half a sheet of newspaper and storing in barrels, boxes, crates or bins. The wrapping prevents the apples from touching each other and thus prevents the spread of decay which may start. It is desirable to line the barrel or other container with a half inch thickness of newspaper on the bottom and sides and then cover the top with newspaper. The lining and covering give full protection and make it possible to store apples in the general cellar storage room.

Cabbages may be packed in barrels of sand in the cellar room, or they may be taken up by the roots, tied in bunches and hung from the ceiling. If there are only a few, lay them head down on clean boards on the floor. There is danger of cabbages decaying indoors if conditions are not right, in which case they become extremely offensive. For this reason many people prefer to resort to storage out of doors. Choose a dry part of the garden and sink ordinary grocery boxes half their depth in the soil. Cover the bottom of the boxes with three inches of dry soil and place the cabbage head downward upon this, covering them with about ten inches of soil. When the weather becomes very severe, the place may be covered with hay.

Personals

Miss Betty Gorst, of the Billing Department, has accepted a position with the Citizens' National Bank.

Mrs. Annie C. Denio, of the Balancing Department, spent her vacation at Waterloo, N. Y., visiting her mother.

Miss Elsie Faulstich, for several years stenographer to the Chief Clerk, has accepted a position with the Central National Bank.

Mr. Samuel S. Amdursky, of the Chemical Warfare Service, Washington, D. C., called on friends in the Industrial Department recently.

Messrs. Franklin J. Howes, Ivar Lundgaard and William Earle spent October 8th and 9th at the Sherman Carbide Works, Sherman, Vermont.

Mr. H. Leslie Prongay has resigned his position with the Company and joined the Auditing Force of the Public Service Commission.

Mr. John E. McMann, of the Coal Traffic Department, has been called to the Colors and has gone to Camp Wheeler, Macon, Ga.

Mr. Samuel Y. Whitehouse, of the Tabulating Department, has resigned his position with the Company to go with the Symington-Anderson Company, on University Ave.

Mr. Charles A. Royce, of the Employment, Safety & Claim Department, spent a very pleasant vacation at Stop Eight on the Manitou Line.

Mr. Leon A. Newman, of the Meter Reading Department, has the sympathy of his friends in the loss of his brother, Mr. Angelo J. Newman, who died of pneumonia October 7th, 1918.

Miss Mildred Berg has been transferred from the Cashier's Department to the Relief Department. Miss Blanche Morse has taken the position vacated by her and is assisted by Miss Mary E. Prindiville, transferred from the Meter Reading Department.

Mr. Edward A. Roeser and Mr.

John B. Allington, two former members of the Industrial Department, have received Second Lieutenant's commissions. Lieut. Roeser is stationed at Camp Vail, N. J., and Lieut. Allington at Fort Monroe, Va. "John" writes that there are no pretty girls in Virginia, and John knows.

Miss Margaret V. Coleman, of the Appliance Department, and Mr. William S. Higgins were married on October 1st, 1918. Her associates at the office had a kitchen shower for her at the time of her leaving the Company, and also gave her a handsome set of silver at the time of the wedding.

Cashier Ray L. Davis and a party of friends have returned from a very enjoyable trip to Honey Harbor, Georgian Bay. The chief object of the trip was fishing and was a success in every way—fine weather and an abundance of fish—muskalonge, bass and pike. The largest fish caught was a muskalonge weighing 15 lbs.

Mr. Arthur C. Rissberger has resigned his position with the Company to go with the Independence Inspection Bureau of Philadelphia, and will be located in Rochester on special work. Mr. Rissberger came with the Company in September, 1913, and was connected with the Industrial Division of the Engineering Department. In May, 1916, he became Assistant Manager of the Employment, Safety and Claim Department and Assistant Editor of "Gas and Electric News." In April, 1918, he received leave of absence to conduct the Central Employment Bureau and continued in this position until the Bureau was absorbed by the Federal Employment Service. Mr. Rissberger as a trained engineer who has made a special study of "personnel work," leaves an enviable record in the two company departments of which he was a member. "Riss" is another likeable specimen of the type of man who "gets things done," and his many friends in the Company wish him continuing success in his new work.

THE KAISER'S DREAM

A Travesty on Poe's "Raven"

BY AVERY M. MEECH

Once upon a midnight dreary,
Kaiser Wilhelm, worn and weary,
Dreamed a dream he'd never dreamed before.
In his dream he heard a rapping,
As of some one gently tapping—
Tapping at his chamber door.

Then his heart began to flutter,
Hardly had he breath to stutter:
"Who is there outside my chamber door?"
Ope'd the door, he saw there standing,
Little children on his landing,
Belgian children by the score.

Gaunt from famine, hopeless, weary,
Ragged, tattered, drooping, dreary,
Dripping blood upon his chamber floor.
While behind them many others—
Fathers, mothers, sisters, brothers—
Met his gaze outside the door.

Refugees from France, Roumania,
Babes drowned with the Lusitania,
All to satisfy the mania
Of the Hohenzollern lust for gore.
Christians murdered in far Turkey,
Russians drowned in waters murky,
Millions stood outside his door,
Calling "Kaiser, nevermore!"

From his dream the Kaiser waking,
Found the very bed was shaking,
For the ground outside was quaking
Like the sand upon a storm-swept shore.
'Twas the Yankee hosts unnumbered,
Who were landing while he slumbered,
Loudly yelling o'er and o'er—
Yelling "Kaiser, nevermore!"

Kaiser, hear that dreadful rumbling?
'Tis your "Dream of Empire" tumbling,
Falling round you as so many have before.
Where is now your proud ambition?
It is in a sad condition,
For the Doughboys have a mission
And they're bound to put it o'er,
Listen, Kaiser; "Nevermore!"

Folks at home, we have a duty!
Here's our stunt and it's a beauty;
We must raise 6,000,000,000 iron men more
If you'd help to lick the Kaiser,
Lend and lend, don't be a miser,
Then the war will soon be o'er,
Hoch der Kaiser—Nevermore!



Save Gasoline



It's a WAR Necessity

Don't spill any

- “ permit leaks
- “ use for washing
- “ run engine while standing
- “ leave tanks or cans open
- “ waste lubricating oils

Stop the leaks
and save the drops

UNITED STATES FUEL ADMINISTRATION