

CHICAGO NORTH SHORE and MILWAUKEE RAILWAY COMPANY

A N N U A L R E P O R T

FOR THE YEAR 1947

SUPERINTENDENT OF WAY, STRUCTURES and POWER

Highwood, Illinois
January 31, 1948

CHICAGO NORTH SHORE and MILWAUKEE RAILWAY COMPANY

MAINTENANCE OF WAY, STRUCTURES and
ELECTRIC POWER SERVICE DEPARTMENT

ANNUAL REPORT
FOR THE YEAR 1947

F O R E W O R D

This report is an account of the work accomplished by all divisions of the consolidated department and includes all A.F.E. and extra-ordinary maintenance work performed by contractors and regular Company forces as well as information and statistics relating to the regular maintenance work which are of interest at this time and will be of value in the future for record and reference purposes.

Effective October 1, 1947, the Communications Department came under the jurisdiction of the Superintendent of Way, Structures and Power with the Telephone Men reporting to the Assistant Superintendent of Power.

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TRACK AND ROADWAY DIVISION
ADDITIONS AND BETTERMENTS

RAIL RENEWAL - OAKTON INTERCHANGE - A.F.E. 5056

The 80# rail in the Interchange Lead Track at Oakton Street was renewed with second-hand 100# rail from the heel of frog of the Main Line switch to the south side of Oakton Street, a distance of 627 track feet. The track was realigned and raised for better operating conditions and the concrete crossing in Oakton Street renewed with plank and asphalt.

INSTALLATION OF SWITCH AT CHICAGO HARDWARE FOUNDRY - A.F.E. 5019

A number 6 - 80# switch was installed on Chicago Hardware Foundry property in North Chicago to provide a connection to the Hardware Foundry Yard from the Naval Station's Camp Moffett coal track. Second-hand switch material was installed on new ties.

CONSTRUCTION OF SWITCHING LEAD - 10th STREET, WEST LINE -
A.F.E. 5002

A new switching lead, 1,100 feet long, was built on the right-of-way, west of the Main Line, from a connection with the existing industrial track, north of 12th Street to the south line of 10th Street. This track is constructed of 80# relay material on new ties and cinder ballast. Grading was done by the Economy Coal Company on a contract basis. The entire track was electrified.

The Economy Coal Company rearranged the switches and curves in their yard and installed a connection to the new lead track which enables them to do their own switching.

EXTENSION OF SIDE TRACK AT NORTHFIED - A.F.E. 5058

The easterly track serving the Weissenberg Yard at Northfied was extended south 340 feet to serve the Avondale Manufacturing Company. Construction consists of 80# relay rail on second-hand ties and cinder ballast. Two crossings were built of plank to accommodate driveways in the Weissenberg and Builders Service Co. yards.

TRACK AND ROADWAY DIVISION

ADDITIONS AND BETTERMENTS - CONTINUED

TRACK REHABILITATION - GLEN FLORA TO HOLDRIDGE ROAD - A.F.E. 5023

The Main Line tracks between Glen Flora Crossover and Holdridge Road were reballasted by Railway Forces. Track was raised on the old ballast and dressed with new stone. Cinder shoulders were constructed and ties renewed where necessary. At Golf Road Crossing, the track was skeletonized to bottom of ties and raised on new stones; all ties were renewed and a plank and asphalt crossing installed. This work completes the reballasting program begun in 1943 and includes the final raise through the "Sink Hole", north of Golf Road.

RETIREMENT OF TRACKS AT NORTH CHICAGO BARN - A.F.E. 5047

In connection with the conversion from street railway to bus operation in Waukegan and North Chicago, all tracks serving the North Chicago Barn were removed by Railway Forces. The rail was sold for scrap.

Considerable other work which was done under this authority is described in the Bridge and Building Section.

RETIREMENT OF WAUKEGAN CITY LINES - A.F.E. 5055

Work was started on the removal of all City Line tracks in the City of Waukegan. Rail in the southbound track was removed from the end of pavement, north of Tenth Street, to Browning Avenue, a distance of 1,885 track feet. Curves at Water and County and at Water and Utica, special work in Utica Street and the crossing at Washington and County were removed. Rail was sold, on the ground, for scrap. Pavement was repaired with brick, grouted in place.

Tracks on the Terminal site were removed and the rail salvaged. The pits were filled and the entire yard leveled off by Jenkins and Boller, Contractors.

TRACK AND ROADWAY DIVISION
ADDITIONS AND BETTERMENTS - CONTINUED

TRACK CHANGES AT TENTH STREET, EAST LINE - A.F.E. 5059

Due to change in Shore Line operation caused by abandonment of rail operation on Waukegan Streets, a Number 10 facing point crossover was installed in the Main Line tracks south of the Wire Mill Crossing. 80# relay material was used on new treated switch ties. Second-hand bumping posts, salvaged from North Chicago Barn, were installed at the ends of both Main Line tracks, north of the National Envelope Company crossing.

RAIL RENEWAL - RONDOUT SCALE TRACK - A.F.E. 5053

The 80# rail and switches in the gauntlet track serving the scale at Rondout were renewed with 100# relay material. 726 feet of rail and 2 split switches were relaid.

RAIL RENEWAL ON SIDE TRACKS IN ILLINOIS - A.F.E. 4521

65# rail was renewed with 80# relayer rail in Highwood Yard on the west passing track from the north switch to and including the crossover to the Main Line, a distance of approximately 400 track feet.

TRACK AND ROADWAY DIVISION

ADDITIONS AND BETTERMENTS - CONTINUED

INSTALLATION OF RAIL ANCHORS IN ILLINOIS - A.F.E. 4493

1,730 - 100# rail anchors were installed by Company Forces on Main Line tracks in Illinois.

<u>SECTION</u>	<u>RAIL ANCHORS</u>
4 - Lake Bluff	1,630
21 - South Upton	<u>100</u>
TOTAL -	1,730

INSTALLATION OF TIE PLATES IN ILLINOIS - A.F.E. 4510

4,608 - 100# double shoulder tie plates were installed by Company Forces on ties renewed in Main Line tracks in Illinois.

<u>SECTION</u>	<u>TIE PLATES</u>
7- Edison Court	750
16- Howard-Dempster Line	50
17- Glenayre	1,450
18- Briergate	1,348
20- Deerpath	650
21- South Upton	<u>360</u>
TOTAL -	4,608

After this A.F.E. was closed on April 30, 1947, an additional 10,674 tie plates were installed on Illinois Sections and charged to maintenance.

<u>SECTION</u>	<u>TIE PLATES</u>
1 - Winnetka	250
4 - Lake Forest	1,473
7 - Edison Court	456
8 - Zion	2,732
17 - Glenayre	4,078
18 - Briergate	1,043
21 - South Upton	<u>642</u>
TOTAL -	10,674

TRACK AND ROADWAY DIVISION

ADDITIONS AND BETTERMENTS - CONTINUED

CHANGE TO C. & N.W. RY. CO. YARD AT KENOSHA - A.F.E. 5027

In connection with the construction of the automatic interlocking plant at Kenosha, Railway Track Forces made the following changes to tracks in the C. & N.W. Railway Yard:-

1. A new switching lead was built north of and parallel to the Main Line from 30th Avenue to the Nash curve. This is an extension of the existing siding west of 30th Avenue. A new crossover was installed to connect this track to the Main Line. Switches serving the Standard Oil Company and City Water Department Yards were removed from the Main Line and reinstalled in the new track. The Main Line switch to the Nash Plant was removed and the track lined over to connect with the switching lead. The new track is built of 90# and 100# C. & N.W. relay rail on new ties and cinder ballast. Most of the fill was obtained from the Nash Company.

2. A new 72# switch was installed in the No. 2 yard track and a connection made to the passing track west of the existing home signal. The passing track was taken up between this point and the turnout to the ladder track.

3. The old Nash Siding switch was re-installed in the Main Line just west of the North Shore Main Line and the ladder track out and thrown to connect with this new switch.

4. The passing track was taken up from the old ladder track switch to the Consumers Company switch, 350 feet east of the North Shore Main Line. The Consumers switch was replaced with plain rails. This last step included removing the crossings on the North Shore tracks.

INSTALLATION OF RAIL ANCHORS IN WISCONSIN - A.F.E. 4494

1,075 - 100# rail anchors were installed on Section 9 - McKeon Road.

218 - 100# rail anchors were installed at Kenosha on A.F.E. 5033.

320 - 100# rail anchors were installed on Section 13 - Carrollville and charged to maintenance.

TRACK AND ROADWAY DIVISION
ADDITIONS AND BETTERMENTS - CONTINUED

RAIL RENEWAL - KENOSHA - A.F.E. 5033

Approximately 2300 lineal feet of 80# rail was renewed with 100# relayer rail within the limits of the Kenosha Interlocking Plant. The switch to the 63rd Street team track was renewed with new 100# material. At the time this work was done, the Main Line derails were removed from the track.

This completes the installation of 100# rail from 22nd Street, North Chicago to Harrison Street, Milwaukee.

CONSTRUCTION OF CROSSOVER TO NASH MOTORS PLANT - A.F.E. 5038

A new No. 10 trailing point crossover was installed from the southbound Main Line to the Nash Company switching lead, north of 60th Street, Kenosha. The Main Line switch is 100# and balance of track is 80# on new ties and cinder ballast. This crossover was built to facilitate switching into the Nash Plant.

INSTALLATION OF TIE PLATES IN WISCONSIN - A.F.E. 4511

3,255 - 100# double shoulder ties plates were installed by Company Forces on ties renewed in Main Line tracks in Wisconsin.

<u>SECTION</u>	<u>TIE PLATES</u>
9 - McKeon Road	1,300
13 - Carrollville	493
14 - Grange Avenue	1,462
TOTAL -	3,255

After this A.F.E. was closed on April 30, 1947, an additional 7,532 plates were installed on Wisconsin Sections and charged to Maintenance.

<u>SECTION</u>	<u>TIE PLATES</u>
9 - McKeon Road	1,232
10 - Kenosha	1,730
11 - Racine	3,096
13 - Carrollville	35
14 - Grange Avenue	1,333
15 - Milwaukee	106
TOTAL -	7,532

TRACK and ROADWAY DIVISION

MAINTENANCE WORK

In addition to the routine work of maintaining the track and right-of-way, the following work was done by Company Forces and charged to maintenance:

Renewed the rail in the northbound curve, north of Linden Avenue, Wilmette. New 100# rail was installed, replacing 80# A.S.C.E. and 98# guarded-section rail. A guard rail made of secondhand 100# rail, was bolted to the low rail, using cast iron filler blocks and special tie plates. The base of this guard rail was cut in the field with the acetylene torch to provide proper flangeway.

Renewed 80# rail on high side of southbound curve north of Linden Avenue with 80# relay rail.

Repaired 62 broken rail joints on Greenleaf Avenue by thermit welding.

Slippages, which had occurred at several places on the east bank of the cut between Elm Street, Winnetka and Hubbard Woods, were repaired by installing cribs made of old ties and casting back the displaced earth.

Renewed 80# rail on high side of both tracks of the Glencoe gauntlet with 80# relay rail.

Renewed broken guard rail chairs in reverse curve north of Park Avenue, Glencoe and renewed the 80# rail on the high side of both tracks with 80# relay rail.

At Washington Avenue, Highwood, the Main Line crossing was renewed. New ties, stone ballast and a plank and asphalt surface were installed.

All 100# positive type guard rails in Main Line switches between Washington Avenue Crossover and Fort Sheridan Crossover were renewed with new standard 11 foot, 100# guard rails. A total of 19 guard rails was renewed.

The siding off of the northbound track south of Sacred Heart, commonly called the Bolander Siding, was retired and the material salvaged.

TRACK and ROADWAY DIVISION

MAINTENANCE WORK - CONTINUED

At Winnetka Avenue, Skokie Valley Line, the Cook County Highway Department installed a 42 foot precast concrete slab crossing over each track and paved the Devil Strip with concrete. The roadway was widened and paved with asphalt.

Railway Forces removed the old crossing, renewed all ties and surfaced and lined the track. The grade at the crossing was adjusted to put all rails on one plane for better riding qualities on the highway. Both tracks were lined and surfaced throughout the reverse curve.

Lined and surfaced both tracks through the reverse curve south of Briergate.

Renewed 3 movable point crossings at K.O. Tower and lined and surfaced both tracks in the curve south of the Tower.

Relaid existing 100# rail in the northbound curve from Kelly's Siding to Green Bay Junction, South Upton, with new 100# rail.

Lined and surfaced both tracks from Kelly's Cross-over to Green Bay Junction, South Upton, Skokie Valley Line.

The crossings and crosswalks at 19th and 18th Streets, North Chicago, Main Line, were renewed with treated gum sections and the Devil Strips paved with asphalt. Ties and stone ballast were renewed.

Lined and surfaced both tracks through the reverse curve at 18th Street, North Chicago, Main Line, and through the curve north of Holdridge Road.

New treated gum crossing installed at Bain Road, South Kenosha. The Devil Strip was paved with asphalt. Track was skeletonized; all ties renewed and new stone ballast applied.

TRACK and ROADWAY DIVISION
MAINTENANCE WORK - CONTINUED

Treated gum crossing and crosswalk sections were installed at 75th Street, Kenosha. All ties were renewed and new stone ballast applied. The Devil Strip was paved with asphalt and the approaches built up with the same material. Both tracks were lined and surfaced from the south end of the curve to 73rd Street.

Installed 1600 pairs of reconditioned 100# angle bars on Section 8 and 650 pairs on Section 14.

Removed the Transport Co. Crossings at Mitchell Street, Milwaukee and installed straight rails.

Renewed 1 switch at Milwaukee Terminal.

Thermit welded 45 broken joints on South 5th Street, Milwaukee, between Harrison Street and Madison Street.

Renewed the northbound curve at 2nd and Wells Streets with a 140# curve originally bought for Water and Genesee Street, Waukegan. The rails were recurved to proper radius in the Transport Company's Shop.

TRACK and ROADWAY DIVISION
MAINTENANCE WORK - CONTINUED

TIES RENEWED

Ties were renewed by Company forces as follows:

<u>SECTION</u>	<u>MAIN LINE</u>	<u>SIDE TRACK</u>	<u>SWITCH</u>
1 - Winnetka	174	-	41
3 - Highwood	883	21	85
4 - Lake Forest	1,763	346	141
5 - Libertyville	1,664	194	75
6 - Waukegan East Line	213	208	14
7 - Waukegan West Line	475	1,142	140
8 - Zion	2,292	-	-
9 - McKeown Road	1,228	-	-
10 - Kenosha	529	171	26
11 - Racine	1,433	318	-
12 - 4-Mile Road	-	200	-
13 - Carrollville	321	80	-
14 - Grange Avenue	1,096	-	41
15 - Milwaukee	115	50	34
16 - Howard-Dempster	716	-	248
17 - Glenayre	2,767	288	78
18 - Briergate	1,220	35	-
20 - Deerpath	420	1	20
21 - South Upton	<u>1,694</u>	<u>-</u>	<u>47</u>
 TOTAL	 19,003	 3,054	 970

BRIDGE AND BUILDING DIVISION

ADDITIONS AND BETTERMENTS

INSTALL ILLUMINATED EXIT SIGNS AT 509 SOUTH STATE STREET, CHICAGO A.F.E. 5037

Nine (9) illuminated exit signs and seven (7) emergency lighting outlets were installed at fire exits in the basement, 1st, 2nd, and 3rd floors of the Baggage Building at 509 South State Street, Chicago to comply with an order of the Chicago Building Inspector. Work was done by Kelso-Burnett Company under the supervision of the Chief Architect.

NEW PASSENGER STATION - HIGHLAND PARK - A.F.E. 4580 and 5039

The west 50 feet of the first floor of the old Company owned building at 11 North St. Johns Avenue, Highland Park, was remodeled to make a new passenger station. Work was done by W. J. Scown Company, General Contractors, under the supervision of the Chief Architect.

Work consisted of raising and leveling ceiling of first floor; installing steel columns and reinforcing floor beams; construction of Waylite block partitions; plastering all interior walls and installation of new terrazzo floor. A new fluorescent lighting system was installed and the entire interior painted. The boiler room was remodeled and a new chimney built. The heating system consists of 2 unit heaters mounted on the ceiling and supplied from a steam boiler fired by an oil burner. A third unit heater was installed later. The entire front was remodelled, providing modern store type front windows and new entrance doors including a door to the stairway leading to the second floor. Existing concession fixtures were moved into the new station. The old ticket booth was remodeled and re-installed.

At a later date the rear portion of this building was remodeled by Fallon and O'Donovan, General Contractors. New 4" Waylite partitions were built on both sides of the passageway from the Waiting Room to the rear of the building, with one four foot wide door opening in each wall making two storage rooms. 2 drop lights were installed in each room with a switch in the corridor. The old elevator and shaft were removed and the opening in the second floor closed in. The large rear door of the building was removed; the opening partly bricked in and 2 - 3 x 7 doors installed.

BRIDGE AND BUILDING DIVISION

ADDITIONS AND BETTERMENTS - Continued

RENEW WATER LINE IN HIGHWOOD, SOUTH YARD - A.F.E. 4559

Approximately 260 feet of galvanized water main, serving the car washer and yard hydrants in the south yard, was replaced with 4 inch transite pipe. This work was done by Company forces and extends from the car washer connection north to the end of the main. Branch lines serving the yard hydrants within the above limits were renewed with 2 inch transite pipe. This A.F.E. is 60% completed.

INSTALLATION OF SHOWER BATHS IN HIGHWOOD SHOPS - A.F.E. 4585

A battery of 3 prefabricated metal shower stalls, complete with masonry base, shower heads, mixing valves and curtains, was installed in the wash room on the second floor of the Highwood Car Shops. Existing sewer and water lines were extended to serve the new installation. All work was done by Company forces.

CONSTRUCTION OF BLACKSMITH SHOP AT HIGHWOOD - A.F.E. 5001

A new concrete block building, 32'-4" x 34'-8" was built north and west of the Car Shop to replace the Mechanical Department Blacksmith Shop which was destroyed by fire. Construction consists of 8 inch concrete block walls on concrete footing with a pre-cast concrete roof on steel trusses and columns.

The W.J. Scown Building Company wrecked the old building, cleaned up the site and built the new building except for the steel work. Railway forces fabricated and erected the columns and roof trusses which were made of 80# rail.

Air, water, gas and steam lines were run underground from the main shop to the new building and outlets installed. Two unit heaters are suspended from the roof trusses. The steam supply was run from a connection with the main near the Armature room and the return line run under the floor of the main shop to the existing return line in No. 3 pit. This latter line was renewed.

Electric wiring and fixtures were installed by the Kelso-Burnett Co.

Company forces installed a 1 ton traveling crane with an electric trolley hoist inside the building and erected a crane rail from the new shop to connect with the existing crane rail outside the main shop. A new foundation was built for the large power hammer. This consists of a concrete-encased rail grillage at the bottom with a solid timber grillage above, extending to floor level. The main anchor bolts extend into the concrete and are welded to the rails.

BRIDGE AND BUILDING DIVISION

ADDITIONS AND BETTERMENTS - Continued

RETIREMENT OF FACILITIES AT GREAT LAKES - A.F.E. 5006

Company forces retired the timber portion of the high platform serving the west side track at Great Lakes Main Gate Station and also retired one frame ticket agent's booth from the north end of the northbound platform.

REMODELING OF GLENAYRE SECTION HOUSE - A.F.E. 5050

The section house at Glenayre was converted into a two-apartment building, making one apartment for the section foreman and his family and the other apartment for the section men. New plaster board partitions were erected, new plumbing fixtures installed in the foreman's apartment, a used coal fired water heater installed and the electric wiring revised. The entire interior was cleaned and decorated. All work was done by Company forces.

EXTENSION OF PITS AT WAUKEGAN GARAGE - A.F.E. 5045

The two inspection pits at the Tenth Street, Waukegan, Garage were extended a distance of 13 feet by Jenkins and Boller, General Contractors. The electric wiring in both pits was revised and extended by Benson Electric Company, Sub-Contractors.

MISCELLANEOUS IMPROVEMENTS FOR BUS OPERATION, WAUKEGAN AND NORTH CHICAGO - A.F.E. 4547

1. A new parking lot, 50' x 200' was constructed north of the Tenth Street Garage. The site was graded and 431 cubic yards of cinders furnished and spread by the Economy Coal Company. A timber bumper, consisting of old trolley poles fastened to ties set in the ground, was built by Jenkins and Boller.

2. A portion of the Fansteel-Company parking lot on the north side of 22nd Street was taken over for Bus parking. Jenkins and Boller set a row of posts on the north line of this area and Company forces made and erected two signs reading "No Parking, Reserved for North Shore Busses"

BRIDGE AND BUILDING DIVISION

ADDITIONS AND BETTERMENTS - Continued

3. At North Chicago Barns, Company forces, after removing all tracks, filled in the pit in the east barn, graded the dirt floor and spread a layer of screenings over the entire area.

In the west barn the south half of the pit was filled in and the pit lighting and heating systems adjusted by Company forces. Jenkins and Boller Contractors built a concrete block wall across the south end of the reaming pit. The bridge gang bolted bearing timbers to the face of the curbs and installed a plank covering over the pit. Jenkins and Boller placed a 6 inch concrete floor, covering the east half of the barn from the door to the south end of the pit, including an approach apron outside the door. Company forces spread screenings over the remainder of the floor in this barn.

HEATING CHANGES AT MILWAUKEE BARN - A.F.E. 4547

The Maag Company of Milwaukee completed the work of remodeling the heating system in the Milwaukee barn which was started in 1946. Work this year consisted of installing 5 overhead, thermostatically controlled unit heaters.

MOTORIZING KINNEAR DOORS ON CAR BARN - A.F.E. 4548

Manually operated electric door openers were installed on the Kinnear doors at Highwood, North Chicago and Milwaukee Barns. Each door is seperately controlled by push button switches located both inside and outside of the building. All motors operate on 220 volt - 3 phase A.C. power.

The Kinnear Manufacturing Company furnished and installed the motors and miscellaneous equipment. At Highwood the electrical work was done by Kelso-Burnett; Genesee Electric Company installed the power supply at North Chicago and S.H. Bente, Electrical Contractor did the wiring. At Milwaukee all electrical work was done by Trester Service Electric Company.

BRIDGE AND BUILDING DIVISION

MAINTENANCE WORK

BRIDGES AND TRESTLES

The following repairs were made by Company forces:

DODGE AVENUE, EVANSTON

The ballasted deck portion of this bridge was skeletonized and re-waterproofed. New stone ballast was installed and all ties renewed. The north end of the northbound bridge was raised to grade on steel shims and new anchor bolts were set in the abutment.

OAK CREEK, MILWAUKEE COUNTY

Renewed 9 piles - including 2 complete bents, 5 caps, 5 braces, 16 stringers, 26 ties and 2 mud sills. Renewed the bulkheads at both end of the bridge.

PUETZ ROAD, MILWAUKEE COUNTY

Renewed 7 piles, 4 caps, 4 braces, 7 stringers, 1 tie and 1 mud sill. This included the complete renewal of 1 pile bent. The bulkheads at both ends of the bridge were also renewed.

SOUTH MILWAUKEE ROAD, MILWAUKEE COUNTY

Renewed 7 piles, 2 braces, 4 stringers, 1 mud sill and bulkheads at both ends of the bridge.

AUSTIN AVENUE, MILWAUKEE

Renewed 3 piles, 4 caps, 2 braces and all 28 stringers.

SHERIDAN PLACE, HIGHLAND PARK

Renewed 37 ties and 8 guard rails.

VINE AVENUE, HIGHLAND PARK

Renewed 42 ties and 24 guard rails.

BLOOM STREET, HIGHLAND PARK

Renewed 40 ties and 12 guard rails.

BRIDGE and BUILDING DIVISION

MAINTENANCE WORK

BUILDING and PLATFORM REPAIRS

In addition to minor repairs to buildings and platforms on the system, the following major items were done:

Built new concrete block garbage box 4'-0" x 8'-8" at Church Street, Evanston. This box is built on a concrete floor. All doors are metal covered.

Remodeled stores at 1145-1147 Greenleaf Avenue, in the Wilmette Store Building. All old partitions and window bulkheads were removed and 2 new doorways cut in the wall between the 2 stores. The interior was washed and painted.

The restaurant in the basement of the Highwood Office Building was renovated throughout. The interior was completely redecorated, all open telephone wires removed, all fixtures repaired, a new fluorescent lighting system installed, Venetian blinds installed and an asphalt tile floor laid. Lighting and floor work were done by contract. Windows in the east wall of the Dining Room were covered with sheet rock before painting.

New wood shelving was built and installed in the Storeroom on the second floor of the Public Service Building at Highwood.

The heating boiler at Lake Forest Station was repaired and completely retubed by the Peters Portable Welding Service of North Chicago.

Removed 2nd frame ticket booth from northbound City Car platform at Great Lakes, Main Gate, and installed in North Chicago Substation to provide warm office for Operators.

Renewed the roofing on the canopy over the C.R.T. platform at Dempster Station with 2 plies of smooth Mule Hide roofing.

Constructed new concrete septic tank at Briergate Station. The outlet is connected into the old outfall line.

Moved the frame ramp shanty from Harrison Street, Milwaukee, to Edison Court and set up as an addition to Car Cleaners' facilities.

BRIDGE and BUILDING DIVISION

MAINTENANCE WORK

BUILDING and PLATFORM REPAIRS - CONTINUED

Replaced existing old style frame shelter at South Kenosha with "H" type shelter.

Renewed the roof on the Truscon Storage Building at Harrison Street, Milwaukee, with a new sheet metal roof on wood rafters.

Renewed the steel smoke stack on the Milwaukee Barn with a welded steel stack, 30 inch diameter and 65 feet high, made of 1/4 inch steel plate. Also installed a hood on the stack and renewed the stack plate and damper on top of the boiler. All work was done by the Milwaukee Boiler Manufacturing Co.

MISCELLANEOUS

The stone retaining wall along the track south of Hazel Avenue, Glencoe, was reinforced by placing 293 cubic yards of bank run sand against the wall. This material was delivered in trucks by N. M. Pierre and worked into place with an end loader. The Bridge Gang erected a timber crib along the south curb of Hazel Avenue to keep the fill from running out into the street. An 8 inch vitrified pipe line was laid at the foot of the wall to provide drainage.

The track scale at Rondout was completely overhauled. The steel beam supporting the dead rail was renewed, concrete bearing pedestals replaced or repaired and all steel members painted. The wood deck was completely renewed.

Maintained Adams and Wabash, Wilson Avenue and Howard Street Passenger Stations, Montrose Freight Station and South State Street Baggage Room in Chicago.

Operated steam heating plants at Wilson Avenue Station, Highwood Office, North Chicago Barn, Waukegan Garage and Milwaukee Barn during the 1946-1947 heating season. At the start of the new 1947-1948 heating season, the operation at Wilson Avenue was turned over to the General Ticket and Baggage Agent and operation at North Chicago, Waukegan and Milwaukee to the Shop Department. This division continues to operate the Highwood Plant and maintains all heating plants as in the past.

BRIDGE and BUILDING DIVISION

MAINTENANCE WORK

MISCELLANEOUS - CONTINUED

Repaired asphalt crossings on the system.

Operated the Weed Killer.

Repaired Company owned houses and buildings as requested by the Real Estate Department.

FENCING

FENCE REBUILT BY BRIDGE GANG

Seven Mile Road to Caledonia Road - West Side	-	5,400 Lin. Ft.
Elm Road to Ryan Road - West Side	-	<u>8,400</u> Lin. Ft.
TOTAL	-	13,800 Lin. Ft.

REBUILT BY FENCE GANG OF HIGH SCHOOL BOYS

13th Street to 12th Street, Waukegan - Both Sides	-	1,200 Lin. Ft.
12th Street to Edison Court - East Side	-	8,000 Lin. Ft.
8th Street to Dugdale Road - West Side	-	<u>2,000</u> Lin. Ft.
TOTAL	-	11,200 Lin. Ft.

REBUILT BY CYCLONE FENCE COMPANY

The Cyclone Fence Company rebuilt the fence on both sides of the right-of-way from the North Line of 20th Street to the south line of 13th Street, North Chicago. Fence was completely renewed with steel posts and No. 9 gauge wire fabric - 60 inches high with a 2 inch mesh. A total of 9,311 feet of fence and 11 - 16 foot gates were installed. This includes wing fences at each street. The distance along the track is 4,150 feet.

The Fence gang built a new standard fence along the top of the east bank from Harbor Street to Woodlawn Avenue, Glencoe, a distance of 1,200 feet. Right-of-way marker posts were set on the true line at each intersecting street.

BRIDGE and BUILDING DIVISION

MAINTENANCE WORK

MACHINE SHOP

In addition to routine maintenance of plumbing, heating plants, tools and work equipment, making and repairing parts for the Signal and Interlocking Department and cutting and welding work for the Mechanical Department - the following major work was done:-

Overhauled 10 Section Motor Cars and 6 Maintainer's Speeders.

Built 2 new push cars.

Repaired 15 frogs and 4 switch points.

Built up crossing frogs at Ryan Tower, 5th and Wisconsin and 3rd and Wells, special work at Milwaukee Terminal and rail ends at K.O. Tower and Mitchell Street.

TIN SHOP

Did all necessary work required in repairs to buildings and heating plants.

Rebuilt steam table for Downeys Concession.

Made forge hood, stacks and ventilators for new Blacksmith Shop at Highwood.

Remodeled the roof drains on all Skokie Valley Stations.

Formed and painted sheet metal for new roof on Truscon Building at Harrison Street, Milwaukee.

Made card holders for new racks for Storehouse.

Installed new hot air furnace in Company House at 408 Railroad Avenue, Wilmette.

Made up all ventilating ducts for 2 rebuilt cars.

Made water coolers, flush tanks, water supply tanks, card holders, toilet chutes, destination box panels, car heater, magazines, roof flanges, roof jacks and ventilators and did other sheet metal work as requested by the Mechanical Department.

BRIDGE AND BUILDING DIVISION

MAINTENANCE WORK

BUILDINGS PAINTED

<u>LOCATION</u>	<u>DESCRIPTION</u>
Wilson Avenue, Chicago	- Washed interior - Painted upper halls and washrooms.
Howard Street, Chicago	- Painted kitchen and Trainmen's Room Washed Terrazzo and Wash-rooms.
Wilmette Avenue, Wilmette	- Painted interior of station.
387 Wilson St., Winnetka	- Painted interior of Section House.
Elm Street, Winnetka	- Painted interior of station.
Hubbard Woods Station	- Painted inside and outside.
Ravinia Station	- Painted inside and washed brick.
Highwood Avenue, Highwood	- Washed inside of station.
Highwood Office Building	- Decorated Restaurant.
Highwood Annex Building	- Washed interior of Barber Shop.
Fort Sheridan	- Painted interior of station.
997 McKinley Rd., Lake Forest	- Painted interior of Section House.
East Prairie Rd. Section House	- Painted inside and outside.
Dempster Street Station	- Painted interior and washed brick.
Harmswoods Station	- Painted inside and outside.
Glenayre Station	- Painted inside and outside.
Northfield Station	- Painted inside and outside.
Northbrook Station	- Painted inside and outside.
Woodridge Station	- Painted inside and outside.
Briergate Station	- Painted inside and outside.
Briergate Section House	- Painted inside and outside.
Highmoor Station	- Painted inside and outside.
Sheridan Elms Station	- Painted inside and outside.
Deerpath Section House	- Painted inside and outside.
Deerpath Station	- Painted inside and outside.
South Upton Section House	- Painted inside of West House.
North Chicago Junction	- Painted interior of station.
Kenosha Station	- Painted interior.
Harrison St., Milwaukee	- Washed interior of station.
Harrison St., Milwaukee	- Painted interior of Barn.
South Upton Tower	- Painted interior of Tower.
Libertyville Section House	- Painted interior.

COMPANY HOUSES DECORATED

<u>LOCATION</u>	<u>DESCRIPTION</u>
1147 Greenleaf Ave., Wilmette	- Painted interior of store.
550 Lincoln Ave., Winnetka	- Washed and painted interior of apartment.
1210 Washington St., Waukegan	- Painted interior of west apartment.

SIGNAL and INTERLOCKING DIVISION

ADDITIONS and BETTERMENTS

JOINT CROSSING PROTECTION - GLENCOE - A.F.E. 5048

An agreement was signed with the C. & N.W. Ry. Company on September 3, 1947, providing for joint automatic gate and flasher light signal crossing protection at Green Bay Road and South Avenue crossings in Glencoe. Under the terms of the agreement, the C. & N.W. is to install joint automatic gates and flasher signals at South Avenue while at Green Bay Road, the North Shore is to move its west automatic gate west of the C. & N.W., install joint flasher signals on both railroads and install a Model "E" automatic gate on the north sidewalk west of the C. & N.W. The existing sidewalk gate west of the North Shore is to be relocated to protect the southbound platform. Each Road to install its own circuits and controls.

At South Avenue, all relays and track circuits are installed ready to connect to the C. & N.W. control circuits. The cut-out for the existing northbound track circuit was moved 600 feet south to the north side of the crossing. An additional track circuit was installed on the southbound between Hazel Avenue and South Avenue.

At Green Bay Road, the 2 gate bases have been installed west of the C. & N.W., the 2 flasher signals have been set up on pre-cast bases and all necessary underground cables installed.

Completion of this project awaits the installation of the balance of the C. & N.W. Railway's facilities by that Company.

KENOSHA INTERLOCKING PLANT - A.F.E. 5027

Work was started on the conversion of the mechanical interlocking plant at Kenosha to an automatic plant. This involves the installation of an automatic interlocking plant in a fireproof housing, a new tower to house an emergency operating machine, all signal facilities and underground cable on the C. & N.W. and a new southbound distant signal and relay case on the North Shore. This work includes rearrangement of the C. & N.W. yard tracks and elimination of Nash lead and C. & N.W. yard lead crossing of our tracks, described in the Track and Roadway Section. All cable and signal facilities between the North Shore home signals and all underground cable and other facilities beyond the home signals are included in A.F.E. 5028.

SIGNAL AND INTERLOCKING DIVISION
ADDITIONS AND BETTERMENTS - CONTINUED

KENOSHA INTERLOCKING PLANT - CONTINUED

At the close of the year, the following work had been done:-

A new tower was built in the southeast corner of the Railroad crossing. This is a frame structure, sheeted inside and outside with transite board, with a concrete floor and a concrete foundation. A steel relay house on concrete piers was located south of the new tower. The relay house was received already assembled and with all relays and other instruments in place and prewired, the existing southbound Home Signal No. 5 was removed on September 22, 1947 and a new Home Signal, L-10, installed 358 feet south of the old location. This is a three-position color light signal equipped with white marker light and is temporarily controlled from the old mechanical tower. The existing southbound semaphore type distant signal was replaced on December 11, 1947 by a new three-position color light Distant Signal, No. 544, located 2000 feet north of 48th Street. A track circuit type annunciator was installed with the start 7800 feet north of Signal 544. All concrete bases and underground cable has been installed on the C. & N.W. Railway. Two new fixed Distant Signals were put in service on December 26, 1947. Local 110 volt A.C. power is used to light these signals. Changes were made to the existing mechanical plant from time to time as the C. & N.W. track work progressed.

INSTALLATION OF BLOCK SIGNAL FACILITIES THROUGH KENOSHA
A.F.E. 5028

This A.F.E. supplements A.F.E. 5027 and includes the installation of signal power line, signal cable, relay cases and signal controls from 75th Street, Kenosha to the north end of Burlington Road curve.

The 2200 volt signal power line was extended by Company Forces from 75th Street to the north end of the project, a distance of 20,000 feet. This work has been completed except for installing the transformers.

SIGNAL AND INTERLOCKING DIVISION

ADDITIONS AND BETTERMENTS - CONTINUED

KENOSHA BLOCK SIGNAL FACILITIES - CONTINUED

New aerial signal cable has been installed between 73rd Street and the northbound home signal, a distance of 4000 feet. This cable will replace existing aerial cables and open line wires in this area.

Underground signal cable was installed from the northbound home signal to the north end of Burlington Road curve, a distance of 15,300 feet. Cable was carried through all street crossings in steel pipe. The Meade Electric Company dug about 13,000 feet of the trench with a small trenching machine. All other work was done by Company Forces.

Concrete bases and relay cases were installed for future block signals north from the Interlocking Tower to the north limits of the project.

ADDITIONAL CROSSING PROTECTION - 52nd STREET, KENOSHA --
A.F.E. 5049

This project includes the installation of 2 flashing light signals to operate in conjunction with the existing automatic gates and the rearrangement of existing track circuits.

Work completed consists of installation of D.M.G.O-9 Storage Battery in a pre-cast concrete battery box.

SIGNAL AND INTERLOCKING DIVISION

MAINTENANCE WORK

In addition to the routine work of maintaining interlocking plants, block signals and crossing protection devices, the following work was done by Company Forces and charged to Maintenance:-

Lamp units in switch protection signals at Ravinia Park, Elm Place and Vine Avenue were changed to allow use of 10 volt rebased lamps.

At Winnetka Avenue, Skokie Valley Line, the north-east automatic gate was relocated on a new concrete foundation. Flasher signals equipped with cast iron crossbuck signs, reflex type "Number Of Tracks" signs and "Stop On Red Signal" signs were installed ahead of both gates. Both gate arms were lengthened and a 3rd, steady-burning lamp installed on each arm. A new storage battery was installed in a precast concrete battery well. All work was done by Company Forces at the expense of Cook County.

At Dundee Road, Skokie Valley Line, the southbound track cut was relocated on the south side of the crossing. A bumper post with reflex signs was installed to protect the northeast automatic gate pedestal.

A copper-oxide rectifier was installed at South Upton Tower for charging the main battery. One motor-generator set was retired and the other left in place for stand-by service.

The relay case at 19th Street, North Chicago, which had been previously damaged, was replaced.

At 22nd Street, North Chicago, East Line, the north-west gate was removed to provide more clearance for busses making the turn. The southwest gate arm was extended to give maximum protection and the west smash gate moved to the south side of the switch Railway track.

SIGNAL AND INTERLOCKING DIVISION

MAINTENANCE WORK - CONTINUED

Standard railroad crossing signs were installed at School Street and Kotz Road, Skokie Valley Line. Standard wood crossbuck signs were mounted on the 2 existing autoflags at 16th Street, North Chicago, East Line. At Westlight Road, Skokie Valley Line, the existing standard crossing sign was replaced with a cast iron crossbuck sign mounted on the autoflag.

The 4 manual gate posts at 13th Street, Racine, were relocated due to pavement changes. Two new sheave boxes were also installed.

The steady-burning advance warning signs at Middle Road, Racine were removed due to pavement widening.

A new Mechanical Switchman was installed at the north end of the Oklahoma Avenue Crossover. The unit at the south end of this crossover was replaced and sent to the factory for repairs.

The Mechanical Switchman at the south end of the City car crossover at Downeys, Shore Line, was removed and not replaced due to abandonment of street car operation in Waukegan.

All Mechanical Switchmen were inspected and checked for oil level. Units at Austin Avenue, Oklahoma Avenue, Oakton Street, Main Street and Rondout were taken apart, cleaned and reassembled.

Three inch galvanized pipe was installed across the road at the following locations where crossings were being renewed or repaired:-

18th Street, North Chicago
19th Street, North Chicago
13th Street, Racine
16th Street, Racine

During the year, 86 relays were repaired in the Rapid Transit Company Relay Shop and 43 motors were repaired by the Holt Electric Company of Milwaukee.

SIGNAL AND INTERLOCKING DIVISION

MAINTENANCE WORK - CONTINUED

Eleven automatic gate pedestals were replaced and taken to the Signal Shop for overhauling. Locations involved are:-

Wilmette Avenue, Wilmette	-	1 Gate
Green Bay Road, Glencoe	-	2 Gates
Highwood Avenue, Highwood	-	1 Gate
Kostner Avenue, Skokie	-	1 Gate
Oakton Street, Skokie	-	1 Gate
Main Street, Skokie	-	1 Gate
Simpson Street (Harmswoods)	-	1 Gate
Mawman Avenue, Lake Bluff, S.V.L.	-	1 Gate
73rd Street Kenosha	-	1 Gate
W. Nicholson Rd. (Oak Creek)	-	1 Gate

SIGNAL INSPECTOR

Made tests in conformity with I.C.C. requirements to check the operating characteristics of all control relays used on block signal and automatic crossing protection circuits on the entire system.

Made insulation tests on new underground cable installed through Kenosha.

Made circuit controller tests on the Shore Line.

Made monthly inspections, as required by law, of Ryan, Racine, Kenosha, South Upton, K-O. and Dempster Interlocking Plants.

SIGNAL AND INTERLOCKING DIVISION

MAINTENANCE WORK

CROSSING GATE OPERATION

59 Automatic Gate Locations, including Middle Road

	<u>1947</u>	<u>1946</u>
Gates broken by automobiles	101	124
Other interruptions*	406	384

20 Manually Operated Crossing
Gate Locations

Gates broken by automobiles	44	35
Other interruptions*	93	100

*Includes interruptions due
to power failures, blown
fuses, mechanical failures,
frosted contacts, line
trouble, track circuit
trouble, sleet, pedestrians
breaking sidewalk arms, etc.

CROSSING GATES AND SIGNALS MAINTAINED

Automatic Gates	53	54
Automatic Gates & Flashers	6	5
Manual Gates	20	20
Flasher Signals	6	6
Autoflags - Track Circuit	16	16
Autoflags - Manual Control	3	3
Block Signals - S.T. Miles	111.7	111.7
Switch Protection Signals	8	8
Fire Crossing Signals	4	4
Interlocking Plants	5	5
Smash Gates	3	3
Gate Indication Signals	12	12

EQUIPMENT

Equipment was purchased and retired on the following A.F.E.'s.:

A.F.E. 4555

Purchased 2 type G-1-C Buda Motor Cars for Section Gang use and retired 1 Model 19-L Buda Motor Car.

A.F.E. 5017

Purchased a secondhand Whipp 16-inch shaper for the Speeder Shop and a Ruemlin Type D-5342 exhaust fan for the Welding Shop.

Purchased a Greenlee No. 790 hydraulic pipe pusher with attachments to handle pipe up to 4 inch diameter.

Purchased 2 Ingersoll-Rand P.B.-8 paving breakers and 1 Worthington W.B.-81 paving breaker.

A.F.E. 5024

Purchased 12 Barco tie tampers - Model TT4.

Purchased a 6 H.P. Mall portable gasoline rail grinding outfit complete with accessories and retired the old 600 volt Goldsmith grainder which was sold to the Rapid Transit Co.

WAY and STRUCTURES SUMMARY

	<u>1947</u>	<u>1946</u>
<u>*Track Construction - Lineal Feet</u>		
Side Track Constructed	1,800	355
Side Track Retired	1,830	420

<u>*Rail Installed - Single Track Feet</u>		
140#	110	200
100#	2,700	23,387
80#	<u>2,100</u>	<u>9,243</u>
Total -	4,910	32,830

<u>Rail Renewed in Kind - Single Track Feet</u>		
100#	3,050	4,841
80#	<u>1,386</u>	<u>2,762</u>
Total -	4,436	7,603

<u>*Rail Removed - Single Track Feet</u>		
127#	110	200
91#	1,885	2,649
98#	230	-
80#	2,600	23,487
65#	<u>2,000</u>	<u>9,208</u>
Total -	6,825	35,544

<u>Tie Plates Installed</u>		
100#	26,069	23,298
100# Secondhand	-	1,570
80# x 100# Secondhand	<u>3,134</u>	<u>5,390</u>
Total -	29,203	30,258

<u>Angle Bars Renewed - Pairs</u>		
100#	2,250	8,677

*Does not include work done on C. & N.W.
right-of-way at Kenosha.

SUMMARY - CONTINUED

	<u>1947</u>	<u>1946</u>
<u>*Special Work</u>		
Crossovers Installed	1	-
Crossovers Removed	-	3
Turnouts Installed	5	-
Turnouts Removed	6	-
Crossings Built Up	3	4
Frogs Repaired	15	13
Switch Points Repaired	4	10
Thermit Welds	145	174

<u>Ties Renewed</u>		
Main Line	19,003	26,670
Side Track	3,054	2,946
Switch	950	713
Bridge	146	362
3rd Rail	20	44
Total -	23,173	30,735

<u>*Ties Installed on New Work</u>		
Side Track - New	494	355
Switch - New	290	-

<u>Ballast - Cars</u>		
Stone	135	432

<u>Broken Rails</u>		
100#	1	-
80#	3	2

*Does not include work done on
C. & N.W. right-of-way at Kenosha.

SUMMARY - CONTINUED

	<u>1947</u>	<u>1946</u>
<u>Crossings</u>		
Pre-cast Concrete Crossings Installed	1	-
Gumwood Crossings Installed	4	-
Asphalt Crossings Rebuilt	1	10
<u>Bridge Repairs</u>		
Bridges Repaired	8	12
Bridges Painted	-	9
<u>Painting</u>		
Buildings - Painted and Decorated	32	65
Company Houses Painted and Decorated	3	3
<u>Crossing Protection</u>		
Automatic Flashers Installed - Locations	1	2
Automatic Gates Damaged by Automobiles	101	124
Manual Gates Damaged by Automobiles	44	35
<u>Fencing</u>		
Right-of-Way Fence Rebuilt - Lin. Ft.	33,300	9,578
<u>Weed Killer</u>		
Two Applications - Single Track Miles	200	180
One Application - Single Track Miles	-	20
Total Solution Used - Gallons	56,300	72,550
(Also used 250 Gal. Dow Contact Weed Killer on Libertyville Line)		
<u>Carload Material</u>		
Sand and Stone	161	469
Coal	28	23
Ties	69	94
Cinders	132	128
Miscellaneous	28	26
	418	740

ELECTRIC POWER SERVICE DIVISION

ADDITIONS and BETTERMENTS

CONSTRUCTION OF SWITCHING LEAD AT 10th STREET, WEST LINE -
A.F.E. 5002

Trolley wire was installed on the entire length of the new switching lead built between 12th Street and 10th Street, Waukegan, West Line. All rail joints were bonded.

RETIREMENT OF TRACKS AT NORTH CHICAGO BARN - A.F.E. 5047

All trolley wires were removed at North Chicago Barn including the lead from the Main Line.

INSTALLATION OF BLOCK SIGNAL FACILITIES THROUGH KENOSHA -
A.F.E. 5028

Extended 2200 volt signal power line from 75th Street, Kenosha to north end of Burlington Road curve, a distance of 20,000 feet. Installation of transformers remains to be done.

Installed aerial cable from 73rd Street to the northbound home signal, a distance of 4000 feet.

Installed underground cable from northbound home signal to north end of job. Trenching and backfilling were done by other forces.

CONSTRUCTION OF AUTOMATIC SUBSTATION SOUTH OF 7-MILE ROAD -
A.F.E. 4525

The balance of the new substation equipment was installed and the station put in operation in March, 1947.

LIGHTING AT MILWAUKEE BARN - A.F.E. 5031

At Milwaukee Barn complete new conduit, wiring and fixtures for pit lights and power in the 2 south pits, new conduit and wiring for all overhead and pit unit heaters and permanent wiring for vacuum and sump pumps were installed by the Trester Service Electric Company. The power supply for these facilities was changed from 600 volt D.C. to 110 volt A.C.

ELECTRIC POWER SERVICE DIVISION

MAINTENANCE WORK

In addition to the routine work of this division, the following major items of maintenance work were done:-

Renewed 104 wood poles, 182 - 45,000 volt transmission line insulators, 150 anchors and 150 back guys.

Renewed 561 cross spans, adding 1 wood strain insulator to each end span in addition to the porcelain insulators.

Renewed 5.81 miles of 4/0 trolley wire including the repair of 17 wire breaks.

Renewed 5,444 - 400,000 C.M. Rail Bonds including those installed on rail renewals.

Replaced 1160 feet of trolley wire in Pettibone Yard which had been removed several years ago when a contractor's batching plant occupied the site. Also repaired and renewed all cross spans, installing insulators between each track. Renewed one pole line between Yard tracks 8 and 9.

POWER STATISTICS FOR YEAR 1947

POWER DISTRIBUTION

	<u>1947</u>	<u>1946</u>
Wisconsin, exclusive of Milwaukee City		
Milwaukee City	10,904,482	12,724,215
	503,076	812,679
Wisconsin, including Milwaukee City	11,407,518	13,537,594
Milwaukee D.C. furnished by Wisc. Elect. Co.	2,255,556	2,388,305
Wisconsin D.C. furnished by Winthrop Harbor	409,272	462,064
Wisconsin Total	14,072,346	16,385,963
Illinois Total	33,047,509	38,292,691
Total Purchased	47,119,855	54,678,654
Average monthly demand for year in K.W.	12,069.9	12,809.0
A.C. & D.C. K.W.H. purchased on demand charge basis	47,866,640	51,025,830
Load factor for year	42.2%	45.5%
Car miles operated on North Shore power, including C.&M.E. and C.T.A. Skokie	9,422,643	11,879,435

ELECTRIC POWER SERVICE DIVISION

COST OF ELECTRICAL ENERGY PER CAR MILE

K.W.H. - C.N.S.&M.Ry. Co. and C.&M.E.Ry. Co.

January	-	4,635,865
February	-	4,124,460
March	-	4,103,313
April	-	3,879,141
May	-	3,850,726
June	-	3,549,731
July	-	3,699,104
August	-	3,526,372
September	-	3,716,041
October	-	3,873,711
November	-	3,988,571
December	-	4,172,820

Total 47,119,855

CAR MILES OPERATED

January	-	842,006
February	-	760,677
March	-	820,557
April	-	769,456
May	-	795,541
June	-	757,172
July	-	780,954
August	-	820,376
September	-	778,356
October	-	798,910
November	-	747,208
December	-	751,430

Operated on North
Shore Power including
C.T.A. Miles on Niles
Center Line

9,422,643

Cost of power for year 1947 - Account 59 \$680,113.92
 Total Car Miles operated on North Shore power 9,422,643
 $\$680,113.92 \div 47,119,855 = 1.443$ cents per KWH
 $47,119,855 \div 9,422,643 = 5.0$ KWH per Car Mile
 $5.0 \times 1.443 = 7.215$ cents per Car Mile - Account 59 Purchased Power

Cost of Electric Energy per Car Mile at Substation A.C. & D.C. \$.07215
 Cost of Electric Energy per Car Mile at Substation D.C. Bus \$.0820

NOTE: The above costs do not include interest on investment, insurance, or taxes.

PURCHASED POWER - 1947

	1947			1946			% Inc. or Dec.		
	Amount	Average Rate	Cost	Amount	Average Rate	Cost	Amt.	Rate	Cost
<u>Public Service D.C. Contract</u>									
Demand as Run	111,658	--	--	113,878.9	--	--	1.95	-	-
Billing Demand	*111,631	\$ 2.018	\$ 225,354.25	*113,805.2	\$ 2.013	\$ 229,158.77	1.1	.25	1.7
Energy K.W.H.	32,459,122	.8705¢	\$ 282,575.16	37,488,236	.7943¢	\$ 297,769.32	13.4	9.6	5.2
Total and Average		1.565 ¢	\$ 507,929.41		1.405 ¢	\$ 526,928.09		11.3	3.6
<u>Public Service A.C. Contract</u>									
Demand as Run	14,146	--	--	19,248.1	--	--	26.6	-	-
Billing Demand	*14,846	\$ 1.50	\$ 22,269.00	*20,382.4	\$ 1.50	\$ 30,575.10	27.2	-	27.2
Energy K.W.H.	4,232,697	.660 ¢	\$ 27,955.44	5,349,096	.5952¢	\$ 31,837.87	20.9	11.	12.2
Total and Average		1.186 ¢	\$ 50,224.44		1.167 ¢	\$ 62,412.97		1.6	19.5
<u>Wisconsin Electric Power A.C.</u>									
Demand as Run	18,249.1	--	--	19,386	--	--	5.9	-	-
Billing Demand	***18,465.7	\$ 1.231	\$ 22,465.66	***19,479	\$ 1.205	\$ 23,478.96	5.2	2.1	4.2
Emergency Demand	--	--	--	2,610	6.00 ¢	\$ 156.60	-	-	-
Energy K.W.H.	7,174,821	.952 ¢	\$ 68,294.09	8,188,498	.8666¢	\$ 70,960.61	12.4	9.9	3.8
Total and Average		1.265 ¢	\$ 90,759.75		1.1552¢	\$ 94,596.17		9.5	4.1
W.E.P. Co. Metered D.C.	2,199,285	1.20 ¢	\$ 26,391.42	2,331,285	1.20 ¢	\$ 27,973.93	5.6	-	5.6
W.E.P. Co. Wells St.D.C.	56,271	1.00 ¢	\$ 562.71	55,020	1.00 ¢	\$ 550.20	2.3	-	2.4
C.T.A. Co. Calvary D.C.	997,659	1.0682¢	\$ 10,656.89	1,266,619	1.052 ¢	\$ 13,325.51	21.2	1.5	20.
GRAND TOTAL KWH-D.C.&A.C.	47,119,855	1.457 ¢	\$ 686,524.62	54,678,754	1.327 ¢	\$ 725,786.87	13.8	9.8	5.4
Cost									

Maximum Demand Data	Public Service D.C.			Public Service A.C.			Wisconsin Electric Power A.C.		
	Month	KW 1947	KW 1946	Month	KW 1947	KW 1946	Month	KW 1947	KW 1946
High Monthly Demand	Feb.	10,027	Jan. 10,103	Feb.	1,457	Feb. 2,037	Jan.	1,631	Jan. 1,624
Low Monthly Demand	July	8,512	June 8,751	July	890	Dec. 1,307	April	1,446	Oct. 1,580
Average Monthly Demand									
For Year		9,305	9,490		1,179	1,604		1,521	1,616
Cost of Coal-Monthly Average		\$4.60per ton	\$4.00per ton		\$4.60per ton	\$4.00per ton		\$6.28per ton	\$5.42per ton
Load Factor As Run		39.8%	45.1%		41%	38%		53.9%	57.8%
* Meter Correction		** 70% Clause		*** Minimum Demand					

37450.12
773500
31685.62

POWER SUMMARY - YEAR 1947

2,305,978	No. 30 Skokie	D.C.
1,140,709	No. 31 Lake Ave.	D.C.
970,690	No. 32 Kotz Road	D.C.
1,026,316	No. 33 Deerfield Road	D.C.
1,010,980	No. 34 Old Mill Road	D.C.
543,736	No. 35 Laurel Ave.	D.C.
1,242,858	No. 36 Libertyville	D.C.
1,828,545	No. 37 Central St.	D.C.
2,658,516	No. 38 Winnetka	D.C.
3,375,180	No. 39 Ravinia	D.C.
2,826,671	No. 40 Ft. Sheridan	D.C.
5,356,810	No. 42 North Chicago	D.C.
469,500	No. A24 North Chicago	D.C.
2,763,463	No. 43 Waukegan	D.C.
2,469,570	No. 44 Beach	D.C.
468,284	No. 45 Winthrop Harbor	D.C.
1,227,816	No. 80 Lake Bluff	D.C.
218,280	Highwood Shops	A.C.
65,676	Waukegan Garage	A.C.
197,810	Skokie Shops	A.C.
107,200	Glencoe & Kenilworth Signals	A.C.
93,514	Howard St. Station	A.C.
91,020	Waukegan to State Line Signals	A.C.
32,459,122	Public Service Company Billings	D.C.
997,659	C.T.A. Calvary Billings	D.C.
33,456,781	Total Purchased, Illinois	D.C.
409,272	Less Winthrop Harbor to Wisconsin	D.C.
33,047,509	Total Illinois	D.C.
4,232,697	Public Service Company Billings	A.C.
37,280,206	Total Illinois	A.C. & D.C.
7,174,821	Wisconsin Electric Power Company	A.C.
2,255,556	Wisconsin Electric Power Company	D.C.
409,272	Winthrop Harbor to Wisconsin	D.C.
47,119,855	Total A.C. & D.C. Purchased	
903,200	McKeown Substation	D.C.
1,294,310	Kenosha Substation	D.C.
566,720	Bose Road Substation	D.C.
1,295,966	Racine Substation	D.C.
425,750	Quarry Substation	D.C.
432,770	Four Mile Road Substation	D.C.
548,420	Nechuta Substation	D.C.
915,100	Carrollville Substation	D.C.
598,500	College Ave. Substation	D.C.
1,248,400	Milwaukee Substation	D.C.
8,229,136	Total Converted in Wisconsin	D.C.
409,272	Winthrop Harbor to Wisconsin	D.C.
2,255,556	Wisconsin Electric Power Company	D.C.
10,893,964	Total to Wisconsin	D.C.
11,407,518	K.W.H. to Wisconsin	A.C.
503,036	Less Milwaukee City	A.C.
10,904,482	K.W.H. A.C. to Wisconsin exclusive of Milw. City	
409,272	K.W.H. D.C. TO Wisconsin from Winthrop Harbor	
11,303,954	K.W.H. to Wisconsin exclusive of Milwaukee City	

K.W.H. PURCHASED - YEAR 1947

	<u>P.S.Co. D.C.</u>	<u>P.S.Co. A.C.</u>	<u>D.C. C.R.T. Co.</u>
Jan.	3,133,754	459,480	122,352
Feb.	2,768,049	396,940	106,058
Mar.	2,778,603	394,252	105,983
Apr.	2,625,798	407,100	94,709
May	2,682,795	329,540	86,809
June	2,471,315	264,741	78,325
July	2,607,785	290,977	80,481
Aug.	2,424,408	280,680	71,884
Sept.	2,575,894	299,359	80,130
Oct.	2,757,101	310,600	58,099
Nov.	2,760,760	372,748	47,263
Dec.	2,872,860	426,280	65,566
	<u>32,459,122</u>	<u>4,232,697</u>	<u>997,659</u>

	<u>Wisc. Elect. Power Co. A.C.</u>	<u>Wisc. Elect. Power Co. D.C.</u>	<u>Wells St.D.C.</u>	<u>Wisc. Elect. Total D.C.</u>
Jan.	685,502	230,130	4,647	234,777
Feb.	633,882	215,250	4,281	219,531
Mar.	632,117	187,750	4,608	192,358
Apr.	562,476	184,625	4,433	189,058
May	584,447	162,500	4,635	167,135
June	589,584	141,405	4,361	145,766
July	567,373	147,875	4,613	152,488
Aug.	590,194	154,625	4,581	159,206
Sept.	595,322	160,875	4,461	165,336
Oct.	580,622	162,625	4,664	167,289
Nov.	588,756	214,500	4,544	219,044
Dec.	564,546	237,125	6,443	243,568
	<u>7,174,821</u>	<u>2,199,285</u>	<u>56,271</u>	<u>2,255,556</u>

Total D.C. K.W.H. Wisconsin Electric Company	2,255,556
Total A.C. K.W.H. Wisconsin Electric Company	7,174,821
Total D.C. K.W.H. Calvary	997,659
Total D.C. K.W.H. Public Service Company	32,459,122
Total A.C. K.W.H. Public Service Company	4,232,697
Grand Total System A.C. & D.C.	<u>47,119,855</u>

MILWAUKEE CITY LINE

Kilowatt Hours - D.C.

	<u>N.S. Feeder</u>	<u>Wisc. Elect. Co.</u>	<u>Wells St.</u>	<u>Total</u>
Jan.	39,360	230,130	4,647	274,137
Feb.	39,530	215,250	4,281	259,061
Mar.	37,130	187,750	4,608	229,488
Apr.	33,280	184,625	4,433	222,338
May	34,700	162,500	4,635	201,835
June	32,470	141,405	4,361	178,236
July	29,460	147,875	4,613	181,948
Aug.	20,550	154,625	4,581	179,756
Sept.	22,750	160,875	4,461	188,086
Oct.	21,100	162,625	4,664	188,389
Nov.	25,710	214,500	4,544	244,754
Dec.	<u>26,590</u>	<u>237,125</u>	<u>6,443</u>	<u>270,158</u>
	362,630	2,199,285	56,271	2,618,186

362,630

✓ 455,556

Kilowatt Hours - A.C.

Jan.	54,215
Feb.	55,833
Mar.	50,317
Apr.	47,407
May	47,211
June	46,177
July	40,691
Aug.	26,863
Sept.	31,773
Oct.	29,661
Nov.	36,313
Dec.	<u>36,575</u>

503,036

Total D.C. K.W.H. to Milwaukee City - 362,630
Total A.C. K.W.H. to Milwaukee City - 503,036
Wisconsin ratio of conversion 72.1%

POWER STATISTICS FOR YEAR - 1947

Illinois Substations D.C. Output in K.W.H.

	<u>Galvary</u>	<u>Miles No. 30</u>	<u>Lake Ave. No. 31</u>	<u>Kotz Rd. No. 32</u>	<u>Deerfield Rd. No. 33</u>
Jan.	122,352	172,549	112,678	89,550	87,439
Feb.	106,058	158,409	103,048	77,470	81,009
Mar.	105,983	165,299	95,038	86,200	80,599
Apr.	94,709	171,749	89,768	79,210	81,109
May	86,809	196,899	87,378	87,414	85,649
June	78,325	186,089	75,808	73,610	76,539
July	80,481	187,599	87,628	78,690	82,739
Aug.	71,884	187,179	83,828	74,820	80,298
Sept.	80,130	200,179	82,838	81,130	88,003
Oct.	58,099	235,709	87,598	78,710	90,794
Nov.	47,263	243,889	109,118	73,680	95,889
Dec.	65,566	200,429	125,981	90,206	96,249
	997,659	2,305,978	1,140,709	970,690	1,026,316

	<u>Old Mill Rd. No. 34</u>	<u>Laurel Ave. No. 35</u>	<u>Liberty. No. 36</u>	<u>Central St. No. 37</u>	<u>Winnetka No. 38</u>
Jan.	93,490	59,618	124,079	176,820	242,718
Feb.	78,400	50,158	120,629	146,990	211,118
Mar.	84,690	51,698	122,739	144,940	200,318
Apr.	78,610	46,968	107,949	138,050	208,718
May	84,800	47,708	103,209	155,780	223,918
June	80,440	37,828	90,449	143,680	213,818
July	83,650	40,648	83,669	162,530	228,018
Aug.	79,850	36,448	78,809	147,190	198,618
Sept.	85,530	30,508	84,039	152,595	216,218
Oct.	89,100	39,138	95,659	156,610	234,018
Nov.	83,510	46,108	106,399	145,680	224,518
Dec.	88,910	47,908	125,229	157,680	256,518
	1,010,980	543,736	1,242,858	1,828,545	2,658,516

POWER STATISTICS FOR YEAR - 1947

Illinois Substations D.C. Output in K.W.H.

	<u>Ravinia</u> <u>No. 39</u>	<u>Ft. Sheridan</u> <u>No. 40</u>	<u>L. Bluff</u> <u>No. 80</u>	<u>No. Chicago</u> <u>No. 42</u>
Jan.	321,890	319,790	434,140	125,900
Feb.	278,790	274,090	415,430	98,000
Mar.	279,690	254,190	459,020	95,000
Apr.	264,890	236,590	434,050	74,100
May	280,690	219,990	452,760	42,800
June	258,990	203,490	433,120	2,500
July	283,390	198,590	446,520	20,000
Aug.	253,690	185,690	411,400	3,500
Sept.	271,290	198,681	442,590	6,800
Oct.	290,090	220,190	480,260	1,600
Nov.	280,490	248,090	459,330	200
Dec.	<u>311,290</u>	<u>267,290</u>	<u>488,190</u>	<u>900</u>
	3,375,180	2,826,671	5,356,810	469,500

	<u>No. Chicago</u> <u>No. A 24</u>	<u>Waukegan</u> <u>No. 43</u>	<u>Beach</u> <u>No. 44</u>	<u>W. Harbor</u> <u>No. 45</u>
Jan.	301,670	237,010	50,740	104,300
Feb.	262,370	211,520	39,990	89,900
Mar.	229,030	216,320	39,610	98,400
Apr.	217,310	208,240	39,960	89,200
May	222,210	199,930	38,390	96,500
June	217,810	193,850	35,056	95,500
July	218,310	209,790	39,998	104,100
Aug.	217,470	190,090	42,410	98,816
Sept.	225,433	206,370	41,560	103,300
Oct.	243,210	215,000	32,130	108,900
Nov.	220,600	198,840	34,360	110,500
Dec.	<u>188,040</u>	<u>182,610</u>	<u>34,080</u>	<u>128,400</u>
	2,763,463	2,469,570	468,284	1,227,816

POWER STATISTICS FOR YEAR 1947

Auxiliary Power Furnished Under D.C. Power Contract in K.W.H.

	<u>Highwood Shops</u>	<u>Waukegan Garage</u>	<u>Skokie Shops</u>	<u>Winnetka Signals</u>	<u>Howard St. Station</u>	<u>Signals No. Chgo. State Line</u>
Jan.	23,400	6,181	23,400	11,400	7,252	7,740
Feb.	19,400	5,306	22,800	9,800	6,542	6,880
Mar.	20,800	6,014	23,000	11,000	7,408	7,600
Apr.	16,100	5,157	15,500	8,100	7,250	7,220
May	15,700	4,608	13,300	8,100	7,562	7,500
June	14,600	4,514	11,600	7,800	6,704	7,520
July	14,600	3,954	10,400	8,000	6,982	7,980
Aug.	16,300	4,016	11,500	9,500	6,446	6,540
Sept.	13,200	4,698	9,100	7,600	7,152	8,080
Oct.	17,400	4,965	11,500	9,700	6,820	8,000
Nov.	23,140	6,727	22,400	5,400	14,212	7,680
Dec.	<u>23,640</u>	<u>2,536</u>	<u>23,310</u>	<u>10,800</u>	<u>9,184</u>	<u>8,280</u>
	218,280	65,676	197,810	107,200	93,514	91,020

Highwood Shops	218,280
Waukegan Garage	65,676
Skokie Shops	197,810
Winnetka Signals	107,200
Howard Station	93,514
No. Chgo. State Line Signal	<u>91,020</u>
	773,500

POWER STATISTICS FOR YEAR - 1947

Wisconsin Substations D.C. Output in K.W.H.

	<u>McKeown</u>	<u>Kenosha</u>	<u>Bose Rd.</u>	<u>Racine</u>	<u>Quarry</u>	<u>4 Mile Rd.</u>
Jan.	100,500	119,450	58,600	141,050	35,650	56,430
Feb.	76,300	100,720	44,560	105,600	33,570	89,480
Mar.	78,500	115,780	50,900	124,020	45,530	45,660
Apr.	79,900	101,070	32,430	125,770	34,800	24,940
May	75,800	122,460	20,450	121,600	37,550	25,940
June	68,100	101,420	47,520	88,090	34,090	22,940
July	68,000	103,430	50,280	83,500	34,020	26,040
Aug.	77,100	112,220	53,170	91,740	35,100	24,310
Sept.	65,000	89,740	53,420	88,020	31,740	35,650
Oct.	71,900	109,360	55,500	93,770	31,400	24,380
Nov.	74,900	111,000	50,900	106,730	34,920	27,730
Dec.	67,200	107,660	48,990	126,076	37,380	29,270
	903,200	1,294,310	566,720	1,295,966	425,750	432,770

	<u>Nechuta</u>	<u>Carrollville</u>	<u>College</u>	<u>Milwaukee</u>	<u>D.C. Wisconsin Elect.Co.</u>	<u>W.Harbor To Wisconsin</u>
Jan.		111,100	62,400	145,500	234,777	34,767
Feb.		95,100	46,700	137,700	219,531	29,966
Mar.	18,800	89,000	57,200	132,400	192,358	32,800
Apr.	53,000	64,700	51,100	112,700	189,058	29,733
May	49,000	66,100	51,600	101,600	167,135	32,167
June	61,000	49,700	40,400	86,000	145,766	31,834
July	69,000	56,900	46,000	84,000	152,488	34,700
Aug.	80,000	55,700	49,000	88,400	159,206	32,939
Sept.	75,720	69,600	50,700	80,600	165,336	34,433
Oct.	48,000	73,300	43,200	79,900	167,289	36,300
Nov.	41,200	91,300	48,500	93,100	219,044	36,833
Dec.	52,700	92,600	51,700	106,500	243,568	42,800
	548,420	915,100	598,500	1,248,400	2,255,556	409,272

Grand Total Converted in Wisconsin - 8,229,136 K.W.H.

POWER STATISTICS FOR YEAR 1947

A.C. Power Furnished in Wisconsin in K.W.H.

	<u>W. Harbor</u>	<u>Beach</u>	<u>Neshuta</u>	<u>Milwaukee</u>
Jan.	141,800	317,680		685,502
Feb.	125,900	271,040		633,882
Mar.	138,972	255,280	20,043	612,074
Apr.	136,700	270,400	56,716	505,760
May	150,500	179,040	52,239	532,208
June	106,021	158,720	65,032	524,552
July	114,497	176,480	73,561	493,812
Aug.	167,920	112,760	92,380	497,814
Sept.	115,519	183,840	61,200	534,122
Oct.	124,600	186,000	55,200	525,422
Nov.	128,028	244,720	50,400	538,356
Dec.	<u>136,200</u>	<u>290,080</u>	<u>63,600</u>	<u>500,946</u>
	1,586,657	2,646,040	590,371 ✓	6,584,450 ✓

Wisconsin

Input A.C. K.W.H. 11,407,518
Output D.C. K.W.H. 8,229,136
Efficiency 72.1%

Public Service Co. A.C. load factor 39.05%
Wisconsin Elect. Co. A.C. load factor 53.8%
System load factor A.C. 47.2%
System load factor A.C. & D.C. 42.2%

2646 040

1586 657

4232697

423 2697

590371

6584450

11467518

POWER STATISTICS FOR YEAR - 1947

Monthly K.W. Demand - Illinois Stations

	<u>No. 30</u> <u>Skokie</u>	<u>Power</u> <u>#31</u>	<u>Power</u> <u>#32</u>	<u>Signals</u> <u>#32</u>	<u>Power</u> <u>#33</u>	<u>Power</u> <u>#34</u>
Jan.	673.3	400	373.4	18.7	436.7	420
Feb.	753.3	426.7	376.7	17	410	440
Mar.	714.3	442	413.4	13.7	436.7	443.3
Apr.	696.7	396.7	383.3	13.3	440	433.4
May	736.7	366.7	370	12.7	430	426.7
June	703.3	326.7	332.4	11.7	420	463.4
July	686.6	295.3	330	11	390	466.6
Aug.	723.4	296.7	373.3	11.7	280	453.3
Sept.	713.3	356.7	346.7	10	416.7	450
Oct.	770	316.7	350	11.7	433.3	496.6
Nov.	833.3	360	326.7	15	456.7	456.7
Dec.	766.6	383.3	440	16.3	473.3	436.7
	8,770.8	4,367.5	4,415.9	162.8	5,023.4	5,386.7

	<u>Signals</u> <u>#34</u>	<u>Power</u> <u>#35</u>	<u>Libertyville</u> <u>#36</u>	<u>Central</u> <u>St. #37</u>	<u>Winnetka</u> <u>#38</u>	<u>Ravinia</u> <u>#39</u>
Jan.	17.7	306.6	420	400	802	983.4
Feb.	16	326.7	370	413.3	886.6	1,006.6
Mar.	13.3	306.7	363.4	396.7	819.7	990
Apr.	13	323.4	360	370	806.7	913.3
May	13	306.7	360	406.7	790	946.7
June	17.4	236.7	320	380	753.3	890
July	13	236.6	310	343.3	716.6	806.6
Aug.	12.4	236.7	283.3	507.4	473.3	976.7
Sept.	14.7	236.7	323.3	379.0	743.3	890
Oct.	13	240	316.7	376.6	766.7	896.6
Nov.	16	326.7	326.7	376.7	813.3	926.7
Dec.	17.3	326.6	360	393.3	813.4	916.7
	176.8	3,410.1	4,113.4	4,743	9,184.9	11,143.3

POWER STATISTICS FOR YEAR - 1947

Monthly K.W. Demand - Illinois Stations

	<u>Fort Sheridan #40</u>	<u>North Chicago #42</u>	<u>North Chicago #A24</u>	<u>Waukegan #43</u>	<u>Beach #44</u>	<u>W. Harbor #45</u>	<u>L. Bluff #80</u>
Jan.	903.3	833.3	680	576.7	136.7	250	1,170
Feb.	900	820	670	573.3	100	236.7	1,190.7
Mar.	833.3	710	626.7	520	106.7	270	1,180.3
Apr.	783.4	756.7	600	543.4	116.7	240	1,136.7
May	803.3	740	640	466.7	196.6	330	1,133.4
June	675.4	-	990	620	176.7	340	1,262.7
July	610	-	956.6	590	170	253	1,266.6
Aug.	630	-	946.7	633	146.7	323.3	1,320
Sept.	682	-	1,056.7	660	210	273.3	1,293.3
Oct.	713.3	-	963.3	593.4	113.3	273.4	1,343.3
Nov.	780	-	1,033.4	670	160	310	1,350
Dec.	816.7	-	713.3	476.7	96.7	250	1,250
	9,130.7	3,860	9,876.7	6,923.2	1,730.1	3,349.7	14,897

	<u>Highwood Shops</u>	<u>Waukegan Garage</u>	<u>Oakton Shops</u>	<u>Kenilworth Glencoe Signals</u>	<u>Howard Street</u>	<u>Zion & Waukegan Signals</u>
Jan.	23.4	6.7	42.6	10.4	12	12
Feb.	22	6.7	32.6	7.3	13	12
Mar.	23.4	5.7	32.7	6.7	12	12
Apr.	17.7	4.4	22.7	6.6	13	11
May	16.7	4.7	21.7	7	13	11
June	15	4.3	17.7	6.3	12	11
July	12	3	13	5	12	15
Aug.	9.4	3.7	11.3	4.7	12	15
Sept.	19.3	3.7	12.3	6	12	12
Oct.	15.7	3.7	19.7	5	12	12
Nov.	22.7	6.3	35.4	6.7	15	14
Dec.	29	12.3	44.7	10.3	15	12
	226.3	65.2	306.4	82	153	149

POWER STATISTICS FOR YEAR - 1947

Monthly K.W. Demand As Run

	Beach	Winthrop	P.S.	Milw.	Total	P.S.Co.	Total
	<u>A.C.</u>	<u>Harbor</u> <u>A.C.</u>	<u>A.C.</u> <u>Total</u>	<u>A.C.</u>	<u>A.C.</u>	<u>D.C.</u>	<u>System</u>
Jan.	1,080	253.	1,333	1,631	2,964	9,909	12,873
Feb.	1,040	417	1,457	1,631	3,088	10,034	13,122
Mar.	780	403.4	1,183.4	1,525	2,708.4	9,693	12,401.7
Apr.	900	363	1,263	1,500	2,763	9,402	12,165
May	733.3	383.4	1,116.7	1,502	2,618.7	9,550	12,168.7
June	873.3	290	1,163.3	1,515.6	2,678.9	8,986	11,664.6
July	580	310	890	1,458.5	2,348.5	8,512	10,860.5
Aug.	756.7	393.3	1,150	1,517.5	2,667.2	8,684	11,351.2
Sept.	643.3	300	943.3	1,530.4	2,473.7	9,121	11,594.7
Oct.	910	243	1,153	1,492.6	2,645.6	9,056	11,701.6
Nov.	823.3	396.7	1,220	1,513.5	2,733.5	9,638	12,371.5
Dec.	913.4	363.4	1,276.8	1,451.3	2,728.1	9,070	11,798.3
	10,033.3	4,116.2	14,149.5	18,268.4	32,417.6	111,655	144,072.8

Monthly K.W.H. Demand As Billed

	Beach	Winthrop	P.S.	Milw.	Total	P.S.Co.	Total
	<u>A.C.</u>	<u>Harbor</u> <u>A.C.</u>	<u>A.C.</u> <u>Total</u>	<u>A.C.</u>	<u>A.C.</u>	<u>D.C.</u>	<u>System</u>
Jan.	1,080	453	1,533	1,631	3,164	9,909	13,073
Feb.	1,040	417	1,457	1,631	3,088	10,034	13,122
Mar.	956.6	403.4	1,360	1,525	2,885	9,693	12,578
Apr.	900	363	1,263	1,500	2,763	9,402	12,165
May	762.6	383.4	1,146	1,502	2,648	9,550	12,198
June	873.3	290	1,163.3	1,515.6	2,678.9	8,986	11,664.6
July	794	310	1,104	1,458.5	2,562.5	8,512	11,074.5
Aug.	756.7	393.3	1,150	1,517.5	2,667.2	8,684	11,351.2
Sept.	720	300	1,020	1,530.4	2,550.4	9,121	11,671.4
Oct.	910	243	1,153	1,492.6	2,645.6	9,056	11,701.6
Nov.	823.3	396.7	1,220	1,513.5	2,733.5	9,638	12,371.5
Dec.	913.6	363.4	1,277	1,451.3	2,728.3	9,070	11,798.3
	10,530.1	4,316.2	14,846.3	18,268.4	33,114.4	111,655	144,769.4

Average Monthly Demand

Public Service Co.	D.C.
Public Service Co.	A.C.
Wisc. Elect. Co.	A.C.
System A.C. & D.C.	

As Run

9,304.6
1,179.1
1,522.3
12,006

As Billed

9,304.6
1,237.2
1,522.3
12,064.1

POWER STATISTICS FOR YEAR - 1947

	<u>Substation</u>	<u>Installed Capacity</u>	<u>Cycle</u>	<u>Number of Units</u>
		<u>K.W.</u>		
	No. 30 Skokie	2,000	60	1
	No. 31 Lake Ave.	1,500	60	1
	No. 32 Kotz Rd.	1,500	60	1
	No. 33 Deerfield Rd.	1,500	60	1
	No. 34 Old Mill Rd.	1,500	60	1
x	No. 35 Laurel Ave.	x 1,000	60	2
	No. 36 Libertyville	1,000	60	1
	No. 37 Central St.	2,000	60	2
	No. 38 Winnetka	1,500	60	1
	No. 39 Ravinia	2,000	60	2
	No. 40 Ft. Sheridan	1,500	60	1
	No. 42 No. Chicago	1,300	25	2
	No. A24 No. Chicago	1,500	60	1
x	No. 43 Pine St.	x 1,900	60	1
	No. 44 Beach	1,000	25	1
	No. 45 Winthrop Harbor	1,200	60	1
x	No. 80 Lake Bluff	x 1,900	60	1
		25,800	950	21
	McKeown Rd.	1,000	25	2
	Kenosha	1,000	60	1
	Bose Rd.	1,000	25	1
	Racine	1,000	25	2
	Quarry	1,000	25	1
	4-Mile Rd	500	25	1
x	Nechuta Rd.	x 1,500	60	2
	Carrollville	1,000	25	2
	College Ave.	500	25	1
	Harrison St., Milw.	2,000	25	2
		10,500	320	14

x NOTE: All substations are rotary converters except No. 35, No. 43 and No. 80 and Nechuta which are Mercury Arc Rectifier Stations

ELECTRIC POWER SERVICE DIVISION

<u>Summary</u>	<u>1947</u>	<u>1946</u>
<u>Crossing Protection</u>		
Autoflag With Bell - Locations	12	12
Autoflag - No Bell - Locations	4	4
Bell and Light Signal - Locations	4	4
600 Volt Bell on Gate - Locations	13	13
Electric Lighted Crossings	57	57
<u>Overhead Trolley</u>		
Catenary Construction - D.T. Miles	32.04	32.04
Wood and Steel Poles - Main Line - D.T. Miles	59.31	59.31
Steel Poles - Milwaukee - D.T. Miles	3.35	3.35
Steel Poles - Waukegan City - S.T. Miles	0.00	3.58
Wood Poles - Yards & Sidings - S.T. Miles	43.23	43.23
Wire Renewed - Miles	5.81	8.16
Wire Breaks	17.	11.
<u>Lighting</u>		
Passenger Stations	37	37
Freight Stations	9	9
Shelters	62	62
Shops and Car Houses	4	4
Substations	10	9
Office Buildings	2	2
Miscellaneous Buildings	31	31
Station Platforms	222	222
Yards	8	8
<u>Substations</u>		
Manual	4	4
Automatic	7	6
<u>Transmission Line - Miles</u>		
60 cycle - 33,000 volt - 3 wire	34.9	34.9
25 cycle - 33,000 volt - 3 wire	48.1	48.1
60 cycle - 2,300 volt - 2 wire	45.5	45.5
25 cycle - 13,200 volt - 3 wire	2.4	2.4
<u>Feeder Cable - Single Wire Miles</u>		
Copper Feeder Cable	177.32	177.32
<u>Bonding</u>		
Bonds Renewed	5,444	6,489

COMMUNICATIONS DIVISION

On December 8, 1947, the North Shore Line discontinued the joint use of the C.T.A. dial system and of the Chicago switchboard - Randolph 8200. A new switchboard - Andover 7450 was established in the Traffic Department Office on which the Highwood trunk lines terminate. Communication with personnel in or near the Chicago Loop is through this new switchboard.

Communication with other points in Chicago is through I.B.T. exchange numbers except that the Evanston Commercial line has been extended to Church Street Ticket Office and to Howard Street Ticket Office, Trainroom and Trainmaster's Office.

A new information bureau was set up at 223 So. Wabash Avenue, telephone number Harrison 8471. This is operated 24 hours a day.

Facilities maintained by this division include:

	<u>1947</u>	<u>1946</u>
Aerial Cable - Miles	11.98	11.98
Underground Cable - Miles	24.28	24.28
2-Wire Open Line - Miles	157.26	157.26
Cable Terminals - All Classes	119	119
XYZ Cable Terminal Protections	20	20
Cable Houses	33	33
Telephone Booths	58	58
Telephone Boxes on Poles	9	9
Telephone Stations	188	188
Interlocking Plant Telephones	14	14
Dispatch Boards - 20 Line	3	3