

CHICAGO NORTH SHORE and MILWAUKEE RAILWAY COMPANY

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

FOR THE YEAR 1949

SUPERINTENDENT OF WAY, STRUCTURES and POWER

Highwood, Illinois
February 21, 1950

CHICAGO NORTH SHORE and MILWAUKEE RAILWAY COMPANY

WAY, STRUCTURES and ELECTRIC POWER SERVICE

ANNUAL REPORT
FOR THE YEAR 1949

FOREWORD

This report is an account of the work accomplished by all divisions of the department and includes all A.F.E. and extraordinary 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.

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TRACK and ROADWAY DIVISION

ADDITIONS AND BETTERMENTS

SIDE TRACK CONSTRUCTION - WOODALL PRODUCTS CO. - JOB ORDER 743

A new track 676 feet long was built east of and parallel to the existing track serving the Phillips Petroleum and Wyeth Laboratory plants in the Weber area. This track starts from a 9 degree turnout in the existing track 460 feet south of the center of Oakton Street, extends north, crossing Oakton Street at grade and ends 150 feet north of the street. A second track 475 feet long was built from a 9 degree turnout in the first new track with the point of switch 10 feet north of Oakton Street and extends north on the east side of the first track to serve the new building of the Woodall Products Company. All track work was done by the Deckert Corporation with the cost being borne by Rand-McNally Company, owner of the property north of Oakton Street, and the Woodall Company. Construction consists of secondhand 100# rail and 90# special work on new ties and stone ballast. The Oakton Street crossing is a special monolithic concrete and steel design developed by the contractor.

SIDE TRACK RETIREMENT AT BRIERGATE - A.F.E. 5128

In order to provide more parking space at Briergate Station, the south 100 feet of side track No. 3 was retired.

RAIL RENEWAL - BIRCH ROAD SIDING - A.F.E. 5121

842 lineal feet of 65# rail was relaid with 80# relay rail on the north end of the Birch Road siding.

TRACK and ROADWAY DIVISION

ADDITIONS and BETTERMENTS

COOK COUNTY CROSSING IMPROVEMENTS

Removable precast concrete slab crossings were installed at Dempster Street, Gross Point Road and Dundee Road on the Skokie Valley Line. The crossing slabs were furnished by the Cook County Highway Department and were unloaded and installed by Railway forces. At all locations, the County's contractor dug out the devil strip, repaved it with concrete and applied blacktop on the approaches. Details of each location are given below:

DEMPSTER STREET

Crossing 72 feet long includes the crosswalk on south side of street. All ties were renewed and tie plated and 468 lineal feet of 100# rail renewed. The track was lined and surfaced on new stone ballast.

GROSS POINT ROAD

Length 96 feet on 2 main tracks and siding. All ties renewed and tie plated. 234 lineal feet of 100# rail renewed in main line and 264 feet of 65# rail in siding renewed with secondhand 100# rail. Tracks were raised, lined and surfaced on new stone ballast.

DUNDEE ROAD

Length 42 feet. Ties were partially renewed and tie plated. Track was raised, lined and surfaced on new stone ballast.

EXTENSION OF SIDE TRACK AT LIBERTY LAKE - JOB ORDER 768

The team track on the north side of the main line at Liberty Lake was extended 275 feet west to serve the new building of the Lumber Dealers Supply Company. Construction consists of 80# relay rail on new side track ties and gravel ballast. Grading and ballast were furnished by the industry. The west 120 feet of the existing team track was taken up and rebuilt during the course of this work, existing 65# rail being replaced with 80# relay rail and all ties renewed. The extension was fully electrified.

TRACK and ROADWAY DIVISION

MAINTENANCE WORK

Effective October 1, 1949 the number of track sections was reduced from 18 to 14. All sections were renumbered and the limits of all except the Shore Line Sections extended. The average main line section is now 8 miles long.

Both tracks between Dodge Avenue and the Canal Bridge were resurfaced due to heavy tie renewals. 105 pairs of reconditioned 100# angle bars were installed.

Gauntlet switches at Ridge Avenue, Asbury Avenue, Dodge Avenue and Main Street were spiked and switch lamps removed on June 21, 1949.

24 cars of cinders were unloaded between the Canal Bridge and East Prairie Road for shoulders.

Unloaded 5 cars of stone between Lake Avenue and Winnetka Avenue, Skokie Valley Line, to fill in the devil strip.

Lined and surfaced both tracks through Briergate curves from south of Deerfield Road to north of Berkley Road. Both road crossings were renewed with plank and asphalt. The ties were found to be good and were not renewed.

The crossing at Bain Road, South Kenosha, was extended 8 feet south by the installation of one additional row of gumwood crossing sections.

The Nash Motors Company's north crossing over the team track south of 52nd Street, Kenosha, was rebuilt with precast concrete slabs. Ties were renewed and 132 lineal feet of 65# rail replaced with 80# relay rail. The track was raised 5 inches through the crossing. The Nash Company furnished the crossing slabs and bore all costs.

After the barrier was removed at Middle Road, the gumwood crossing was extended 8 feet. All existing crossing sections were taken up and moved 4 feet north and one additional row installed on the south end. The devil strip was widened with asphalt.

TRACK and ROADWAY DIVISION
MAINTENANCE WORK - CONTINUED

The double track crossing over the Transport Company's tracks at Greenfield Avenue, Milwaukee, was removed and 102# rail installed in our tracks.

Ground corrugated rail on South 5th Street, Milwaukee from Mitchell Street to Harrison Street.

Renewed broken expansion rails on 6th Street Viaduct and made 32 thermit welds.

Repaired broken rails in Milwaukee and made 36 thermit welds.

Thermit welded 11 joints in National Avenue Crossing and 2 joints in Wells Street Crossing, Milwaukee.

On July 15, 1949 all gauntlet switches through the Winnetka Grade Separation, from Willow Road to Harbor Street, were spiked and the switch lamps removed.

The C. & N. W. Ry. renewed the crossings over the Libertyville Line on October 30, 1949. New 115# crossings were installed. North Shore track forces assisted in this work, the cost of which was borne by the North Western.

Planted 4,000 multiflora rose seedlings on private property north of Rockland Road from St. Mary's Road east about 2,000 feet. This is an experimental planting to determine the effectiveness of these shrubs as a snow fence. The owner of the land furnished the seedlings and Railway track forces did the planting.

TRACK and ROADWAY DIVISION
MAINTENANCE WORK - CONTINUED

Installed 13,603 - 100# double shoulder tie plates as follows:

| <u>SECTION</u> | <u>TIE PLATES</u> |
|----------------------|-------------------|
| 5 - Libertyville | 275 |
| 7 - Waukegan | 70 |
| 8 - Zion | 165 |
| 9 - McKeon Road | 1,050 |
| 10 - Kenosha | 956 |
| 11 - Racine | 764 |
| 13 - Ryan Tower | 500 |
| 14 - Grange Avenue | 1,210 |
| 16 - Howard-Dempster | 2,528 |
| 17 - Glenayre | 3,233 |
| 18 - Briergate | 879 |
| 20 - Deerpath | 600 |
| 21 - South Upton | <u>1,373</u> |
| TOTAL TIE PLATES | - 13,603 |

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 | - | - | 39 |
| 3 - Highwood | 2 | 9 | 5 |
| 5 - Libertyville | 352 | - | 18 |
| 7 - Waukegan | 129 | - | - |
| 8 - Zion | - | - | 3 |
| 9 - McKeon Road | 461 | - | - |
| 10 - Kenosha | 529 | 110 | - |
| 11 - Racine | 406 | - | 2 |
| 13 - Ryan Tower | 285 | - | - |
| 14 - Grange Avenue | 605 | - | 22 |
| 15 - Milwaukee | - | - | 7 |
| 16 - Howard-Dempster | 1,853 | - | 634* |
| 17 - Glenayre | 1,819 | - | - |
| 18 - Briergate | 650 | - | 19 |
| 20 - Deerpath | 305 | - | 8 |
| 21 - South Upton | <u>1,212</u> | <u>-</u> | <u>-</u> |
| | 8,608 | 119 | 757 |

*Includes 553 - 3rd Rail Chair Ties

TRACK and ROADWAY DIVISION

MAINTENANCE WORK

FENCING

Right-of-way fence was repaired as follows:

Oakton Street to Main Street - repaired east side and built new fence on west side - 5,200 Lin. Ft.

Northbrook to Kohling Road - repaired east side - 1,000 ft.

South of County Line Road, Skokie Valley Line, east side, built 1,000 feet of fence on new line. Repaired fence from Kohling Rd. to County Line Road - 2,000 feet.

Green Bay Road to Scranton Avenue, rebuilt north fence - 1,000 feet.

Grand Avenue, Waukegan to Pine Street Substation, built 400 feet of fence on new west right-of-way line.

Bethlehem Avenue to 18th Street, Zion, rebuilt west fence - 1,100 feet.

Kenosha, 52nd Street, north, patched fences, both sides - 2,300 feet.

Taylor Avenue to Middle Road, renewed and repaired both sides - 20,000 feet.

New fence around Nechuta Substation property - 570 feet.

New fence around College Ave. Substation property - 430 feet.

New fences around property sold north of Bolivar Avenue - 1,800 feet.

Renewed 2,600 feet of fence on south side of Scale House.

Renewed north fence east of 4th St., Libertyville - 550 feet.

Rebuilt south fence from 4th St. to Milwaukee Avenue - 1,650 feet.

Rebuilt south fence from Butterfield Road, east - 600 feet.

TOTAL FENCING - 42,200 Lineal Feet

BRIDGE and BUILDING DIVISION

ADDITIONS and BETTERMENTS

HEATING CHANGES AT DEMPSTER STATION - A.F.E. 5105

The existing Utica steam boiler in the Dempster Station, which was damaged beyond repair, was removed from the building and scrapped. One of the "Ideal" steam boilers retired from Milwaukee Terminal was reinstalled at Dempster Street.

CHANGES TO DEMPSTER STATION - A.F.E. 5112

A frame and plaster board partition with a door was erected at the south end of the main waiting room at Dempster Station, closing the waiting room off from the ticket booth and toilet area. The old waiting room has been rented and all station activities confined to the south end of the building. New doors were installed to provide access to the Ladies' Room and the Parcel Room. A new drinking fountain was installed and the train annunciators moved to the new waiting room. The wooden fences between the building and the elevated platform were removed.

REMODELING AT EDISON COURT STATION - A.F.E. 5103

A 14' x 9' Trainmen's Room of frame construction was built on the south end of the station waiting room west of and adjoining the boiler room. A radiator was installed and connected to the station heating system and a 110 volt light fixture and switch installed.

The west side of the boiler room was partitioned off and a lavatory and toilet bowl installed. A new heating boiler was installed and a new brick chimney built.

The men's public toilet room was extended west 3'-6" and a lavatory installed.

Thomas J. Killian Company installed the plumbing. All other work was done by Railway Company forces.

BRIDGE and BUILDING DIVISION

ADDITIONS and BETTERMENTS - Continued

RETIREMENT OF STATION SHELTERS - A.F.E. 5118

Station facilities were retired as follows:

- 2 standard #3 shelters at Austin Avenue
- 1 standard "H" shelter at Three Mile Road
- 1 standard #3 shelter at Berryville Road

Wood intertrack fences were removed at College Avenue, Layton Avenue, Bolivar Avenue and Austin Avenue.

BRIDGE and BUILDING DIVISION

MAINTENANCE WORK

BRIDGES and TRESTLES

The following repairs were made by Company forces: -

CANAL BRIDGE

Repaired timber shoring bent at east end of bridge, shimmed second steel bent east of Drainage Canal and repaired plank walk.

LAMB'S CROSSING

Renewed one cap.

ROOT RIVER

Renewed deck on southbound track, using 219 ties and 40 pieces of guard rail.

OAK CREEK

Renewed all 4 piles and cap in bent #1 southbound and 1 pile and 1 brace in bent #6 northbound.

FUETZ ROAD

Renewed 22 piles, 7 caps, 8 stringers, 19 braces and 4 mud sills. Bents #6 and #8 northbound and #3 and #7 southbound were completely renewed.

SOUTH MILWAUKEE ROAD

Renewed 2 piles, 1 cap and 2 braces.

BRIDGE and BUILDING DIVISION

MAINTENANCE WORK

BRIDGES and TRESTLES - Continued

LAYTON AVENUE COAL TRESTLE

Renewed 13 caps, 38 stringers, 50 ties and 6 guard rails.

BOLIVAR AVENUE

Renewed 11 piles, 1 cap, 6 stringers, 6 guard rails and 4 braces. Renewed timber wing walls at both ends of bridge.

NAVAL STATION TRESTLE

Renewed 4 piles, 5 caps, 9 stringers, 212 ties, 18 braces, 40 guard rails and 5 mud sills. The 65# rail on the bridge was renewed with 660 feet of 80# relay rail. 424 secondhand 80# x 100# tie plates were installed and 660 feet of 65# rail placed for inside guard rail. ✓

BRIDGE and BUILDING DIVISION

MAINTENANCE WORK

BUILDING and PLATFORM REPAIRS

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

At Adams and Wabash Station the E. H. O'Neill Floors Company removed the old floor and installed new rubber tile on the main floor public space and ticket office; the entire mezzanine floor and the second floor waiting room. New asphalt tile wainscoting was installed in the Men's Room in the basement.

The treads on the stairway from the main floor to the mezzanine floor at Adams and Wabash were resurfaced with non-skid "Martex" by the American Abrasive Metals Company.

At Montrose Avenue, Chicago, the wood catwalks, formerly used in trailer-flatcar operations, were removed by Company forces.

The high concrete platform and canopy at Main Street, Skokie, were cut back to permit operation of standard freight equipment on the main line without using the gauntlets.

At Dempster Station the sewer connection from the building to the main sewer was rerouted due to the sale of part of the station grounds. Two manholes, 121 feet of 6 inch vitrified pipe and 107 feet of 8 inch vitrified pipe were installed by the Santucci Construction Company.

At Northfield Station the basement was extended under the remainder of the living quarters and a concrete floor placed. The double door entrance to the waiting room was remodeled and a single door installed.

Wooden steps from the parking lot to the platform were built at Glenayre and Northbrook, replacing existing stone steps.

Waiting room entrances at Briergate and Deerpath were remodeled. Existing double doors were replaced with new single doors.

BRIDGE and BUILDING DIVISION

MAINTENANCE WORK

BUILDING and PLATFORM REPAIRS - Continued

Overhauled the platforms at Edison Court and straightened up the southbound shelter. Installed a new 3/4" copper water line from the east side of the station to west side of west platform.

Following a fire in the Edison Court Freight House, extensive repairs were made to the building by Jenkins and Boller, Contractors. Company forces repaired the foundation under the north half of the building.

Extensive repairs were made to the Section Tool House at Beach Road.

Company forces removed the old frame interlocking tower at Kenosha.

At Racine Station a new 1" copper water line was installed from Grove Avenue to the building. The old line from Washington Street was abandoned. J. S. Martin Plumbing Company was the contractor.

The roof on Milwaukee Barns was patched, all flashings repaired and the entire surface given a heavy coat of hot asphalt by the South Side Roofing Company.

The two apartment buildings at 5th and Michigan Streets, Milwaukee, were torn down; the site leveled and surfaced with cinders for use as a parking lot. The contractor was the Mid-West Wrecking and Salvage Company.

Repaired the foundations at Church Street, Evanston, Station. ✓

At Linden Avenue, Wilmette, the ticket counter and candy cases were enclosed by a steel grill and sliding gate. ✓

BRIDGE and BUILDING DIVISION

MAINTENANCE WORK

BUILDING and PLATFORM REPAIRS - Continued

Remodeled the second floor of the main office building at Highwood to accommodate relocation of various departmental offices. ✓

Installed 500 square feet of "Hexteel" surface Armor and Rock Tred flooring in Highwood Car Shops. ✓

At Great Lakes, Main Gate, the ticket booth was out in two and the south half connected to the south end of the freight office forming a combined freight and ticket office. ✓

A new 3/4" copper water line was installed across Milwaukee Avenue, Libertyville to serve the station.

BRIDGE and BUILDING DIVISION

MAINTENANCE WORK

HEATING

Installed a new hot air furnace at Harmswoods Station.

At Highwood Boiler Room the low water cut-off was connected to the boiler feed pumps and an electric water feed valve mounted on the feed tank by R. A. Heffelfinger. Boiler scale was removed and 102 tubes renewed by Peter's Portable Welding Service Company.

A thermostat, 2 aquastats and manual control switches to govern operation of the unit heaters were installed in the Highwood Blacksmith Shop by R. A. Heffelfinger.

A new A.B.C. gun type oil burner, including all new controls, was installed in the Libertyville Station by F. W. Meeker.

MISCELLANEOUS

All station benches, the candy case, concession safe and ice storage box were removed from Dempster Station and taken to Highwood. All other concession equipment was sold for junk.

An old wood box culvert under the team track and driveway at 4-Mile Road was replaced with 60 feet of 24-inch concrete pipe.

The 48-inch culvert under the track on the south side of Ryan Road was extended west 12 feet with corrugated metal pipe and backfilled with dirt from the right-of-way.

Reinforced concrete jacking pads were installed on both sides of the transfer table pit at Milwaukee Barn. These pads are continuous under both rails of the side track immediately south of the Barn.

BRIDGE and BUILDING DIVISION

MAINTENANCE WORK

MISCELLANEOUS - Continued

Unloaded 4 cars of cinders at Edison Court on the west side of the Cut and Add track, eliminating the wood catwalk and timber retaining wall.

Maintained Chicago Passenger Stations and Baggage Room.

Operated steam heating plant at Highwood Office.

Repaired asphaltic crossings.

Operated the Weed Killer.

MACHINE SHOP

In addition to the routine work of maintaining plumbing and heating facilities, tools and work equipment, the following work was done: -

Overhauled 12 Section Gang motor cars and 6 small speeders including one speeder rebuilt following a collision with an automobile.

Rebuilt 4 push cars.

Installed a new water pump at Highmoor Station. The old pump was rebuilt and installed at Racine Substation.

Made 24 steel gear racks and did general welding and repair work for the Signal and Interlocking Division.

Repaired 9 switch points.

Built up crossing frogs at Ryan Tower, National Avenue and 5th and Wisconsin; rail ends on St. Paul Bridge, Milwaukee, and switch points at Austin Avenue and Harrison Street Yard.

BRIDGE and BUILDING DIVISION

MAINTENANCE WORK

TIN SHOP

About 75% of the time of this shop is devoted to making water coolers, flush tanks, water supply tanks, card holders, toilet chutes, destination sign box panels, car heater magazines, roof flanges, roof jacks and ventilators for the Mechanical Department. Made up all sheet metal work for 11 cars in the reconditioning program.

In addition to the foregoing work for the Mechanical Dept. and miscellaneous spot maintenance to heating plants and sheet metal work on buildings, the following was done:

Renewed gutters on Kenosha Freight Station and repaired gutters and downspouts on Kenosha Passenger Station.

Renewed hot air furnace in Harmswoods Station.

Repaired switch lamps, headlights and marker lamps.

Made garbage and trash cans for stations and concessions.

BUILDINGS PAINTED

| <u>LOCATION</u> | <u>DESCRIPTION</u> |
|--------------------------------|--|
| Adams and Wabash Station | - Painted outside. |
| Wilson Avenue Station | - Painted inside and outside. |
| Downey's Station, West Line | - Washed ceilings, painted toilet rooms. |
| North Chicago Junction Station | - Painted interior woodwork. |
| Edison Court, Waukegan | - Painted inside and outside. |

SIGNAL and INTERLOCKING DIVISION

ADDITIONS and BETTERMENTS

NEW GATE START and HOLDING SIGNAL - NILES CENTER ROAD A.F.E. 5111

The existing southbound start for the Niles Center Road automatic gates was moved from the north side of Dempster Street to a point south of Dempster Street Station platform. A two-position signal was installed adjacent to the southbound track approximately 280 feet north of Niles Center Road. This signal is normally red and shows green only when the gates are in a fully lowered position.

KENOSHA INTERLOCKING PLANT - A.F.E. 5027

The old mechanical interlocking machine and tower were removed and scrapped. All work on the new semi-automatic interlocking plant was done in 1947 and 1948 and is described in the Annual Reports for those years.

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

This project involved installation of a 2200 volt signal power line, overhead and underground signal cables, relay cases and signal controls from 75th Street, Kenosha to the north end of Burlington Road curve. The major portion of this work was done in 1947 and 1948 and was covered in the reports for those years. Work in 1949 consisted of installing the last 4 transformers on the 2200 volt line and removing the old serial cables and line wires between 73rd Street and the northbound home signal.

INSTALLATION OF AUTOMATIC GATES AT BIRCH ROAD - A.F.E. 5123

Two track circuit controlled Griswold Signal Company automatic crossing gates complete with flashing light signals and signs were installed at Birch Road, replacing one track-box operated wigwag signal.

SIGNAL and INTERLOCKING DIVISION

ADDITIONS and BETTERMENTS - Continued

INSTALLATION OF AUTOMATIC GATES AT MIDDLE ROAD - A.F.E. 5116

Two rebuilt Model "M" automatic gates and two new flashing light signal units, complete with signs, were installed at Middle Road, Racine. The old automatic barriers were removed by a scrap metal dealer.

COOK COUNTY CROSSING PROTECTION PROGRAM

Work was started on a program of crossing protection improvements for 9 Cook County grade crossings. The contract for this work was signed in 1944 but work was deferred until 1949 due to material shortages. All costs except engineering are to be borne by Cook County.

CRAWFORD AVENUE

Relocated the southbound cut-out to the south side of the crossing. Relocated the northbound cut-out and Block Signal No. 115 to the north side of the street. Installed insulated joints and track wires for a short single-rail circuit on the side track through the crossing. Moved the 2 automatic gates farther back from the curb and installed concrete bases and poles for 2 flasher signals. Pushed 2 3-inch steel pipes across under the street and installed old steel trolley poles under both tracks south of the street for carrying underground signal cables. Installed a precast concrete battery box.

DEMPSTER STREET

Relocated the southbound cut-out and Block Signal No. 136 to the south side of the street. Installed pipe across the street in the devil strip. Renewed cables to southeast gate.

SIGNAL and INTERLOCKING DIVISION

ADDITIONS and BETTERMENTS - Continued

COOK COUNTY CROSSING PROTECTION PROGRAM - Continued

GROSS POINT ROAD

Pipe was laid through the crossing, in the devil strip.

DUNDEE ROAD

Relocated the northbound cut-out to the north side of the crossing; installed precast concrete battery box and installed 2 concrete bases for flasher signals. The concrete for the bases was furnished and placed by the contractor for the crossing work. Laid old steel trolley poles through the crossing in the devil strip and renewed cables from the relay case to the northeast gate.

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 accounts:

Underground cable installed in 1948 between Signal No. 4 and Signal No. 93 on the Howard-Dempster Line was put in service. The old signal wires and wooden trunking between these points were removed and scrapped.

Track circuits for operation of automatic gates at Oakton were lengthened in both directions. The southbound start was relocated from Main Street to Niles Center Road and the northbound start moved back to Kostner Avenue, an additional distance of 340 feet.

Train annunciators in the Dempster Street Station were moved to the south end of the building when the main waiting room was abandoned.

A time selector circuit was introduced into the northbound gate control circuit for Lake-Cook Road, Skokie Valley Line to provide for northbound trains turning back at Northbrook.

The standard wooden crossbuck sign at Old Mill Road, Skokie Valley Line, was replaced with 2 reflectorized crossbuck signs on wood posts located at the northeast and southwest corners of the crossing. Both posts are further equipped with reflectorized "2 Track" signs and in addition the northeast post carries a reflectorized "STOP" sign. Two reflectorized advance warning signs were bought by the Railway and furnished to the City of Lake Forest which were installed east of the track on Old Mill Road and Buena Road.

SIGNAL and INTERLOCKING DIVISION

MAINTENANCE WORK - Continued

Renewed the concrete base for the southwest gate at 22nd Street, North Chicago, West Line.

At Bain Road the automatic gates were relocated and Block Signal No. 502 moved farther south due to widening of the road by the State Highway Department. Three runs of 2-inch pipe were laid under the road east of the track and new cables run from the relay case to both gates. The main signal cable was lowered to clear the highway ditch on the south side. Gate arms were modernized by the addition of a third lamp which is steady burning.

Installed pipe under 63rd Street, Kenosha and across the tracks and renewed all cables from relay case to gates.

A two-way indicating signal was installed under the canopy of the Kenosha Tower to furnish information to operators of track motor cars of the C. & N.W. Railway.

Renewed manual gates and pipe lines at 12th Street, Racine.

The old manually operated electric crossing gates at Ryan Road were retired and replaced with 2 Model "M" gates, manually operated from the tower. The power supply was changed from D.C. to 110 volt A.C.

Mechanical switchman units at Austin Avenue, Oklahoma Avenue and south end of Oklahoma Avenue Crossover were cleaned and flushed and refilled with new oil.

At Wilmette Avenue, Shore Line, one run of 3-inch pipe was pushed across the street in the devil strip. Renewed all cables from relay case to gates and changed control for gate indication signal from ring switch to mercury controller. ✓

The two shifts of Flagmen at Foss Park Avenue, North Chicago, East Line, were discontinued and signs erected making this crossing a positive safety stop for all trains.

SIGNAL and INTERLOCKING DIVISION

MAINTENANCE WORK - Continued

Control circuit for southbound annunciators at Highland Park Station and Elm Place gate shanty was removed from the ring switch contacts on the Highwood Avenue gates and is now operated by the Highwood Avenue track relay and time relay which permits the bell to ring for 7 seconds. ✓

Shortened the westbound control circuit for automatic gates at 4th Street, Libertyville, and installed a two-position signal east of the crossing to indicate position of gates.

A third lamp was added to each gate arm at 4th Street and Milwaukee Avenue, Libertyville. These lamps are steady burning during the gate operation cycle.

Installed a precast concrete battery box at Garfield Avenue, Libertyville Line.

Removed ARUQ relays in the automatic gates at 75th Street, Kenosha; 4th Street and Milwaukee Avenue, Libertyville; Harbor Street, Highwood Avenue, Deerpath Avenue and Westminster Avenue. These relays were replaced with General Electric contactors.

During the year, 34 relays were repaired in the C.T.A. Relay Shop. Motors repaired include 10 by Holt Electric Company, Milwaukee; 3 by Sievert Electric Company, Chicago and 10 by Cote Electric Company, Waukegan.

Eight automatic gate pedestals were replaced and taken to the Signal Shop for overhaul. Locations are:

| | | |
|-------------------------|---|---------|
| Willow Road, S.V.L. | - | 1 Gate |
| Deerfield Road, S.V.L. | - | 1 Gate |
| Scranton Avenue, S.V.L. | - | 1 Gate |
| Mawman Avenue, S.V.L. | - | 1 Gate |
| 75th Street, Kenosha | - | 1 Gate |
| Durand Road, Racine | - | 2 Gates |
| Knollwood | - | 1 Gate |

SIGNAL and INTERLOCKING DIVISION

MAINTENANCE WORK

CROSSING GATE OPERATION

61 Automatic Gate Locations.

| | <u>1949</u> | <u>1948</u> |
|-----------------------------|-------------|-------------|
| Gates broken by automobiles | 125 | 106 |
| Other interruptions* | 287 | 328 |

20 Manually Operated Crossing Gate Locations

| | | |
|-----------------------------|-----|----|
| Gates broken by automobiles | 34 | 24 |
| Other interruptions* | 102 | 87 |

*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 | 49 | 50 |
| Automatic Gates & Flashers | 12 | 10 |
| Manual Gates | 20 | 20 |
| Flasher Signals | 6 | 6 |
| Autoflags - Track Circuit | 16 | 16 |
| Autoflags - Manual Control | 3 | 3 |
| Block Signals - S.T. Miles | 111.0 | 111.0 |
| Switch Protection Signals | 8 | 8 |
| Fire Crossing Signals | 4 | 4 |
| Interlocking Plants | 4 | 4 |
| Smash Gates | 3 | 3 |
| Gate Indication Signals | 15 | 13 |

WAY and STRUCTURES SUMMARY

| | <u>1949</u> | <u>1948</u> |
|---|--------------|-------------|
| <u>TRACK CONSTRUCTION - LINEAL FEET</u> | | |
| Side Track Constructed | 1,426 | 367 |
| Side Track Retired | 100 | - |
| <u>RAIL INSTALLED - SINGLE TRACK FEET</u> | | |
| 100# | 2,500 | 1,717 |
| 80# | <u>2,419</u> | <u>367</u> |
| TOTAL - | 4,919 | 2,084 |
| <u>RAIL RENEWED IN KIND - SINGLE TRACK FEET</u> | | |
| 100# | 702 | 487 |
| 80# | <u>-</u> | <u>445</u> |
| TOTAL - | 702 | 932 |
| <u>RAIL REMOVED - SINGLE TRACK FEET</u> | | |
| 91# | - | 18,830 |
| 80# | - | 1,717 |
| 65# | <u>2,267</u> | <u>-</u> |
| TOTAL - | 2,267 | 20,547 |
| <u>TIE PLATES INSTALLED</u> | | |
| 100# | 13,603 | 1,936 |
| <u>ANGLE BARS RENEWED - PAIRS</u> | | |
| 100# | 131 | 148 |

SUMMARY - Continued

| | <u>1949</u> | <u>1948</u> |
|------------------------|-------------|-------------|
| <u>SPECIAL WORK</u> | | |
| Crossovers Removed | - | 1 |
| Turnouts Installed | 2 | 1 |
| Turnouts Removed | - | 12 |
| Crossings Built Up | 3 | 4 |
| Frogs Repaired | - | 6 |
| Switch Points Repaired | 9 | 5 |
| Thermit Welds | 90 | 89 |

| | | |
|---------------------|------------|-----------|
| | | |
| <u>TIES RENEWED</u> | | |
| Main Line | 8,608 | 1,107 |
| Side Track | 119 | 263 |
| Switch | 204 | 251 |
| Bridge | 481 | 233 |
| 3rd Rail | <u>553</u> | <u>17</u> |
| TOTAL - | 9,965 | 1,871 |

| | | |
|-----------------------------------|-----|-----|
| | | |
| <u>TIES INSTALLED ON NEW WORK</u> | | |
| Main Line - New | 466 | - |
| Side Track - New | 207 | - |
| Side Track - Secondhand | - | 145 |
| Switch - New | 84 | - |
| Switch - Secondhand | - | 36 |

| | | |
|-----------------------|----|----|
| | | |
| <u>BALLAST - CARS</u> | | |
| Stone | 10 | 14 |

| | | |
|---------------------|---|---|
| | | |
| <u>BROKEN RAILS</u> | | |
| 100# | 1 | - |
| 80# | 1 | 2 |

SUMMARY - Continued

| | <u>1949</u> | <u>1948</u> |
|---|-------------|-------------|
| <u>CROSSINGS</u> | | |
| Precast Concrete Crossings Installed | 3 | 1 |
| Gumwood Crossings Extended | 2 | - |
| Asphalt Crossings Rebuilt | 2 | 1 |
| <u>BRIDGE REPAIRS</u> | | |
| Bridges Repaired | 9 | 5 |
| <u>PAINTING</u> | | |
| Buildings - Painted and decorated | 5 | 17 |
| <u>CROSSING PROTECTION</u> | | |
| Automatic Gates and Flashers Installed - Locations - | 2 | - |
| Automatic Flashers Installed - Locations | - | 1 |
| Automatic Gates Damaged by Automobiles | 125 | 106 |
| Manual Gates Damaged by Automobiles | 34 | 24 |
| <u>FENCING</u> | | |
| Right-of-Way Fence Rebuilt - Lin. Feet | 42,200 | 4,700 |
| <u>WEED KILLER</u> | | |
| One Application - Single Track Miles | 200 | 200 |
| Total Solution Used - Gallons | 33,200 | 26,400 |
| <u>CARLOAD MATERIAL</u> | | |
| Sand and Stone | 21 | 23 |
| Coal | 19 | 24 |
| Ties | 8 | 4 |
| Cinders | 40 | 29 |
| Miscellaneous | <u>8</u> | <u>5</u> |
| | 96 | 85 |

ELECTRIC POWER SERVICE DIVISION

ADDITIONS and BETTERMENTS

RETIRE LIGHTS AT MONTROSE AVENUE, CHICAGO - A.F.E. 5124

The platform lighting system installed for trailer loading service at Montrose M.D. Station was taken down by C.T.A. forces. The material was shipped to Highwood and scrapped.

BIRCH ROAD AUTOMATIC GATES - A.F.E. 5123

The 2200 volt power line from Kenosha, which terminated at the north end of Burlington Road curve, was extended north to Birch Road, a distance of 4,600 feet. Transformers were installed at the northbound start for Birch Road gates and at Birch Road crossing. The line was further extended north to Bose Road Substation, a distance of 3,600 feet. This extension will eventually be a part of the 2200 volt line but at present is transmitting only 110 volts to the Birch Road southbound start.

RETIRE LIGHTS AT HARRISON ST., MILWAUKEE - A.F.E. 5125

The lighting system installed in the east yard at Harrison Street, Milwaukee for trailer loading service was taken down by Company forces and the material scrapped.

INSTALLATION OF SUBMARINE CABLES AT MILWAUKEE - C. & M.E. Ry. A.F.E. 5

Two runs of 1,000,000 C.M. submarine feeder cable and one 11-pair submarine telephone cable were installed under the bed of the south branch of the Menomonee River immediately east of the Sixth Street Viaduct. Cables start from a connection to existing lines at the first column south of the river, run underground to the south bank, thence in a trench across the river bottom to the north bank and from

ELECTRIC POWER SERVICE DIVISION

ADDITIONS and BETTERMENTS - Continued

there underground to the first column north. Edward E. Gillen Co. did the river crossing work and Wisconsin Electric Power Co. forces performed the work on the shore ends. North Shore forces installed the switches connecting the new cables to the overhead lines at each end. Cables were furnished by the Railway Company. This installation replaces original cables installed in 1907.

ELECTRIFICATION OF SIDE TRACK - LIBERTYVILLE - JOB ORDER #768

The team track on the north side of the main line at Liberty Lake including the 275 foot extension thereto was electrified from the end of existing trolley to the end of track. A total of 790 feet of wire was used. Track was bonded throughout.

ELECTRIC POWER SERVICE DIVISION

MAINTENANCE

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

Due to abandonment of North Chicago Substation, the Load Dispatchers were moved to Racine Substation and the Supervisory Control equipment to Highwood Dispatcher's Office. Communication between Highwood and Racine Substation is had by means of a leased telephone line. Two runs of 500,000 C.M. feeder cable between Tower M-6 on the West Line and North Chicago Substation, a distance of 1,935 feet, were taken down and part of this cable used for a new 4-wire feeder line from Broadway Substation to Tower M-6, a distance of 600 feet. Installed 3 - 500,000 C.M. insulated underground cables in trench from Tower M-6 to Broadway Substation for negative return. All line and cable work was done for the account of the Public Service Company at their expense.

A track box controlled autoflag was installed at Berryville Road, replacing the old bell and light signal.

An electric bell was added to the track box autoflag at Linderman Avenue, Racine.

Renewed 72 wood poles; 235 - 45,000 volt transmission line insulators; 451 anchors and 461 back guys.

Added 1 wood strain insulator to each end of 303 cross spans. These are in addition to the porcelain insulators.

Renewed 7.85 miles of 4/0 trolley wire including 5,400 feet used to repair 22 wire breaks.

Renewed 3,024 - 400,000 C.M. rail bonds.

POWER STATISTICS FOR YEAR 1949

POWER DISTRIBUTION

| | 1949 | 1948 | % Inc. or Dec. |
|--|------------|------------|----------------|
| Wisconsin, exclusive of Milwaukee City | | | |
| Milwaukee City | 8,784,489 | 8,066,061 | 8.91 |
| Wisconsin, including Milwaukee City | 335,461 | 343,656 | 2.38 |
| Milwaukee D.C. furnished by Wisc. Elect. Co. | 9,119,950 | 8,409,717 | 8.45 |
| Wisconsin D.C. furnished by Winthrop Harbor | 2,551,208 | 2,015,840 | 26.56 |
| Wisconsin Total | 335,935 | 292,783 | 14.74 |
| Illinois - Public Service Co. & C.T.A. | 12,007,093 | 10,718,240 | 12.02 |
| | 22,504,811 | 24,463,787 | 8.01 |
| Total Purchased | 34,511,904 | 35,182,127 | 1.91 |

Average Monthly demand for year in K.W.
A.C. & D.C. K.W.H. purchased on Demand charge basis
Load factor for year
Car miles operated on North Shore power, including
C.&M.E. and C.T.A. on Skokie Division

| | | | |
|--|------------|------------|-------|
| | 8,880 | 9,566 | 7.2 |
| | 31,659,195 | 33,799,592 | 6.33 |
| | 40.7% | 40.3% | 0.9 |
| | 6,481,565 | 5,788,241 | 11.98 |

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.

| | <u>Total K.W.H.</u> | <u>Car Miles on N.S. Power</u> |
|--|---------------------------------|--------------------------------|
| Jan. | 3,378,168 | 623,374 |
| Feb. | 3,193,430 | 566,824 |
| Mar. | 3,295,796 | 591,486 |
| Apr. | 2,982,821 | 557,033 |
| May | 2,826,463 | 571,688 |
| June | 2,543,072 | 513,624 |
| July | 2,537,374 | 513,995 |
| Aug. | 2,611,955 | 532,547 |
| Sept. | 2,524,829 | 503,584 |
| Oct. | 2,623,656 | 494,363 |
| Nov. | 2,809,286 | 494,439 |
| Dec. | <u>3,185,038</u> | <u>518,608</u> |
| TOTAL - | 34,511,904 | 6,481,565 |
| Purchased Power - Account 59 | | \$498,857.02 |
| Purchased Power - C. & M.E. Ry. Co. | | <u>41,572.31</u> |
| Total Purchased Power | | \$540,447.33 |
| Operating Expense - Power Accounts | | \$591,602.92 |
| - C.&M.E. Portion | | <u>42,772.31</u> |
| Total Operating Expense - Power Accounts | | \$634,375.23 |
| Total car miles on North Shore Power | | 6,481,565 |
| Unit power cost - cents per KWH: | $540,447.33 \div 34,511,904 =$ | 1.566¢ |
| Unit power consumption - KWH per CM:- | $34,511,904 \div 6,481,565 =$ | 5.325 KWH |
| Unit power cost - Cents per car mile:- | $1.566 \times 5.325 =$ | 8.339¢ |
| Total operating expense - Power Accounts incl. C. & M.E. Portion | | \$634,375.23 |
| Unit operating expense - Power Accounts - Cents per car mile | $\$634,375.23 \div 6,481,565 =$ | 9.787¢ |

POWER STATISTICS FOR YEAR - 1949

LOCOMOTIVE METERED K.W.H.

| | | |
|----------------------------------|-----------------|------------------|
| Engine No. 452 | K.W.H. for year | 126,870 |
| Engine No. 453 | K.W.H. for year | 172,370 |
| Engine No. 454 | K.W.H. for year | 194,520 |
| Engine No. 455 | K.W.H. for year | 361,610 |
| Engine No. 456 | K.W.H. for year | 144,640 |
| Engine No. 457 | K.W.H. for year | 148,060 |
| Engine No. 458 | K.W.H. for year | 192,440 |
| Engine No. 459 | K.W.H. for year | 162,870 |
| Total Metered at Locomotive 1949 | | 1,503,380 K.W.H. |

Power used by locomotives 1,503,380 D.C. KWH
Illinois Part 74.8% 1,124,528
Plus 10% Distribution Losses 112,453
D.C. KWH used in Illinois at point of delivery 1,236,981 K.W.H.
Wisconsin Part 25.2% 378,852
Plus 25% Transmission & Conversion Losses 94,813
A.C. KWH used in Wisconsin at point of delivery 473,665 K.W.H.

K.W.H. Illinois Part - 1,124,528 @ 1.7055¢ \$19,178.83
K.W.H. Wisconsin Part- 473,665 @ 1.3638¢ 6,459.84
Total cost for Elect. Energy \$25,638.67
Total Energy at point of delivery K.W.H. 1,710,646
Total freight car miles Freight 977,189

A.C. & D.C. at point of delivery per freight car mile 1.75 K.W.H.
Purchased Power Cost per freight car mile 2.62¢

PURCH. ELEC. POWER - 1949

| | <u>1949</u> | | | <u>1948</u> | | | | | |
|--|---------------|---------------------|---------------|---------------|---------------------|---------------|-------------|-------------|-------------|
| | <u>Amount</u> | <u>Average Rate</u> | <u>Cost</u> | <u>Amount</u> | <u>Average Rate</u> | <u>Cost</u> | <u>Amt.</u> | <u>Rate</u> | <u>Cost</u> |
| <u>Public Service D.C. Contract</u> | | | | | | | | | |
| Demand as Run | 78,348 | -- | -- | 68,556 | -- | -- | 14.3 | - | - |
| Billing Demand | 78,348 | \$ 2.133 | \$ 167,109.00 | 89,091 | \$ 2.087 | \$ 185,909.25 | 12.1 | 2.2 | 10.1 |
| Energy - K.W.H. | 22,539,245 | 0.9766¢ | \$ 220,125.83 | 24,389,875 | 0.9444¢ | \$ 230,394.43 | 7.7 | 3.4 | 4.5 |
| Total and Average | -- | 1.718 ¢ | \$ 387,234.83 | -- | 1.707 ¢ | \$ 416,303.68 | - | 0.64 | 19.9 |
| <u>Public Service A.C. Contract</u> | | | | | | | | | |
| Demand as Run | 10,000 | -- | -- | 9,463 | -- | -- | 5.7 | - | - |
| Billing Demand | **10,214 | \$ 1.50 | \$ 15,321.00 | **12,489 | \$ 1.50 | \$ 18,733.50 | 18.2 | - | 18.2 |
| Energy - K.W.H. | 2,939,440 | 0.7256¢ | \$ 21,329.89 | 3,339,511 | 0.7051¢ | \$ 23,546.95 | 11.9 | 2.9 | 9.4 |
| Total and Average | -- | 1.245 ¢ | \$ 36,650.89 | -- | 1.266 ¢ | \$ 42,280.45 | - | 1.7 | 13.3 |
| <u>Wisconsin Electric Power Co. A.C.</u> | | | | | | | | | |
| Demand as Run | 15,888.1 | -- | -- | 13,033.7 | -- | -- | 21.9 | - | - |
| Billing Demand | ***18,000 | \$ 1.222 | \$ 21,999.96 | ***13,507.6 | \$ 1.222 | \$ 16,507.57 | 23.3 | - | 23.3 |
| Emergency Demand | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Energy - K.W.H. | 6,180,510 | 1.079 ¢ | \$ 66,692.99 | 5,070,206 | 1.084 ¢ | \$ 54,963.23 | 21.9 | - | 21.9 |
| Total and Average | -- | 1.435 ¢ | \$ 88,692.95 | -- | 1.410 ¢ | \$ 71,470.80 | - | 1.8 | 24.1 |
| <u>W.E.P. Co. Metered D.C.</u> | 2,469,793 | 1.20 ¢ | \$ 29,637.52 | 1,942,376 | 1.20 ¢ | \$ 23,308.51 | 27.2 | - | 27.2 |
| <u>W.E.P. Co. Wells St. D.C.</u> | 81,415 | 1.00 ¢ | \$ 814.15 | 73,464 | 1.00 ¢ | \$ 734.61 | 10.8 | - | 10.8 |
| <u>C.T.A. Co. Calvary D.C.</u> | 301,501 | 1.319 ¢ | \$ 3,976.14 | 366,695 | 1.1424 ¢ | \$ 4,189.46 | 17.8 | 15.4 | 5.1 |
| <u>GRAND TOTAL -</u> | | | | | | | | | |
| Demand D.C. & A.C. | 106,562 | \$ 1.918 | \$ 204,429.96 | 115,067.6 | \$ 1.922 | \$ 221,150.32 | 7.4 | 0.21 | 7.6 |
| Energy D.C. & A.C. | 34,511,904 | .9926 ¢ | \$ 342,576.52 | 35,182,127 | 0.9582 ¢ | \$ 337,137.22 | 1.9 | 3.6 | 1.6 |
| Cost | -- | 1.585 ¢ | \$ 547,006.48 | -- | 1.588 ¢ | \$ 558,287.54 | - | 0.19 | 2.0 |

STATISTICS

| | <u>Public Service D.C.</u> | | | | <u>Public Service A.C.</u> | | | | <u>Wisconsin Electric Power</u> | | | |
|--------------------------------|----------------------------|-------------|--------------|-----------|----------------------------|-------------|--------------|-----------|---------------------------------|-------------|--------------|-----------|
| | <u>1949</u> | <u>1948</u> | | | <u>1949</u> | <u>1948</u> | | | <u>1949</u> | <u>1948</u> | | |
| Coal Cost per Ton - Mo. Avg. | \$5.364 | \$5.055 | | | \$5.364 | \$5.055 | | | \$7.532 | \$7.535 | | |
| Fuel Cost per Therm - Mo. Avg. | 2.529 ¢ | - | | | - | - | | | - | - | | |
| Load Factor as Run | 39.4% | 29.63% | | | 40.3% | 27.8% | | | 53.2% | 38.4% | | |
| | <u>Month</u> | <u>KW</u> | <u>Month</u> | <u>KW</u> | <u>Month</u> | <u>KW</u> | <u>Month</u> | <u>KW</u> | <u>Month</u> | <u>KW</u> | <u>Month</u> | <u>KW</u> |
| High Monthly Demand | Feb. | 7,267 | Jan. | 9,372 | Jan. | 1,080 | Jan. | 1,367 | Feb. | 1,484.4 | Aug. | 1,504.7 |
| Low Monthly Demand | July | 5,846 | May | 110 | June | 623 | May | 53 | Sept. | 1,183.9 | Apr. | 0 |
| Average Monthly Demand | | 6,529 | | 5,710 | | 833.3 | | 789 | | 1,324 | | 1,125.6 |

*Meter Correction

**70% Clause

***Minimum Demand

POWER SUMMARY - YEAR 1949

| | | |
|------------|--|-------------|
| 1,406,248 | No. 30 Skokie | D.C. |
| 874,645 | No. 31 Lake Avenue | D.C. |
| 636,612 | No. 32 Kotz Rd. | D.C. |
| 122,510 | No. 32 Signals | A.C. |
| 852,548 | No. 33 Deerfield Rd. | D.C. |
| 619,380 | No. 34 Old Mill Rd. | D.C. |
| 124,040 | No. 34 Signals | A.C. |
| 413,176 | No. 35 Laurel Avenue | D.C. |
| 990,050 | No. 36 Libertyville | D.C. |
| 643,246 | No. 37 Central St. | D.C. |
| 2,192,725 | No. 38 Winnetka | D.C. |
| 2,682,281 | No. 39 Ravinia | D.C. |
| 1,831,199 | No. 40 Ft. Sheridan | D.C. |
| 7,000 | No. 42 North Chicago | D.C. |
| 1,442,411 | No. A24 North Chicago | D.C. |
| 1,422,163 | No. 43 Waukegan, Pine St. | D.C. |
| 282,810 | No. 44 Beach Rd. | D.C. |
| 1,006,900 | No. 45 Winthrop Harbor | D.C. |
| 4,230,320 | No. 80 Lake Bluff | D.C. |
| 236,130 | Highwood Shops | A.C. |
| 217,420 | Skokie Shops | A.C. |
| 58,000 | Glencoe Signals | A.C. |
| 60,300 | Kenilworth Signals | A.C. |
| 101,148 | Howard St. Station | A.C. |
| 24,280 | Waukegan Signals | A.C. |
| 72,900 | Zion Signals | A.C. |
| 22,539,245 | Public Service Co. D.C. Contract Billings | |
| 301,501 | C.T.A. Calvary Billings | D.C. |
| 22,840,746 | Total Purchased - Illinois | D.C. |
| 335,935 | Less Winthrop Harbor to Wisconsin | D.C. |
| 22,504,811 | Total - Illinois | D.C. |
| 2,939,440 | Public Service Co. Billings | A.C. |
| 25,444,251 | Total - Illinois | A.C. + D.C. |
| 6,180,510 | Wisconsin Elect. Power Company | A.C. |
| 2,551,208 | Wisconsin Elect. Power Company | D.C. |
| 335,935 | Winthrop Harbor to Wisconsin | D.C. |
| 34,511,904 | Total A.C. & D.C. Purchased | |
| ===== | | |
| 689,900 | McKeown Substation | D.C. |
| 805,650 | Kenosha Substation | D.C. |
| 494,200 | Bose Rd. Substation | D.C. |
| 901,900 | Racine Substation | D.C. |
| 200,658 | Quarry Substation | D.C. |
| 314,080 | Four Mile Rd. Substation | D.C. |
| 661,700 | Nechuta Substation | D.C. |
| 634,000 | Carrollville Substation | D.C. |
| 489,600 | College Ave. Substation | D.C. |
| 1,172,000 | Milwaukee Substation | D.C. |
| 6,363,688 | Total Converted in Wisconsin | D.C. |
| 2,551,208 | Wisconsin Elect. Power Co. | D.C. |
| 335,935 | Winthrop Harbor to Wisconsin | D.C. |
| 9,250,821 | Total - Wisconsin | D.C. |
| 9,119,950 | K.W.H. Wisconsin | A.C. |
| 335,461 | Less - Milwaukee City | A.C. |
| 8,784,489 | K.W.H. A.C. to Wisconsin exclusive of Milwaukee City | |
| 335,935 | K.W.H. D.C. to Wisconsin from Winthrop Harbor | |
| 9,120,424 | K.W.H. to Wisconsin exclusive of Milwaukee City | |

K.W.H. PURCHASED - YEAR 1949

| | <u>P.S. Co. D.C.</u> | <u>P.S. Co. A.C.</u> | <u>C.T.A. D.C.</u> |
|-------|----------------------|----------------------|--------------------|
| Jan. | 2,186,730 | 329,960 | 23,929 |
| Feb. | 2,092,263 | 279,800 | 17,628 |
| Mar. | 2,174,732 | 296,340 | 24,079 |
| Apr. | 1,983,041 | 228,160 | 31,889 |
| May | 1,836,076 | 215,900 | 57,288 |
| June | 1,654,159 | 199,860 | 54,435 |
| July | 1,625,331 | 216,630 | 38,269 |
| Aug. | 1,695,909 | 234,770 | 21,117 |
| Sept. | 1,632,433 | 222,700 | 22,016 |
| Oct. | 1,720,215 | 222,180 | 1,268 |
| Nov. | 1,855,611 | 220,260 | 3,370 |
| Dec. | <u>2,082,745</u> | <u>272,880</u> | <u>6,213</u> |
| | 22,539,245 | 2,939,440 | 301,501 |

| | <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. | 577,408 | 251,750 | 8,409 | 260,159 |
| Feb. | 577,438 | 218,750 | 7,551 | 226,301 |
| Mar. | 571,894 | 220,375 | 8,376 | 228,751 |
| Apr. | 542,848 | 188,750 | 8,133 | 196,883 |
| May | 524,974 | 183,918 | 8,307 | 192,225 |
| June | 465,004 | 161,500 | 8,112 | 169,612 |
| July | 476,108 | 172,750 | 8,286 | 181,036 |
| Aug. | 475,988 | 179,875 | 4,296 | 184,171 |
| Sept. | 460,526 | 184,625 | 2,529 | 187,154 |
| Oct. | 471,448 | 205,875 | 2,670 | 208,545 |
| Nov. | 488,264 | 235,375 | 6,406 | 241,781 |
| Dec. | <u>548,610</u> | <u>266,250</u> | <u>8,340</u> | <u>274,590</u> |
| | 6,180,510 | 2,469,793 | 81,415 | 2,551,208 |

| | |
|--|------------------|
| Total D.C. K.W.H. Wisconsin Electric Power Co. | 2,551,208 |
| Total A.C. K.W.H. Wisconsin Electric Power Co. | 6,180,510 |
| Total D.C. K.W.H. C.T.A. Calvary | 301,501 |
| Total D.C. K.W.H. Public Service Co. | 22,539,245 |
| Total A.C. K.W.H. Public Service Co. | <u>2,939,440</u> |

GRAND TOTAL - SYSTEM K.W.H. A.C. & D.C. 34,511,904

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. | 40,230 | 251,750 | 8,409 | 300,389 |
| Feb. | 33,500 | 218,750 | 7,551 | 259,801 |
| Mar. | 29,760 | 220,375 | 8,376 | 258,511 |
| Apr. | 30,570 | 188,750 | 8,133 | 227,453 |
| May | 24,810 | 183,918 | 8,307 | 217,035 |
| June | 19,860 | 161,500 | 8,112 | 189,472 |
| July | 20,780 | 172,750 | 8,286 | 201,816 |
| Aug. | 15,950 | 179,875 | 4,296 | 200,121 |
| Sept. | 10,600 | 184,625 | 2,529 | 197,754 |
| Oct. | 6,580 | 205,875 | 2,670 | 215,125 |
| Nov. | 1,290 | 235,375 | 6,406 | 243,071 |
| Dec. | <u>2,320</u> | <u>266,250</u> | <u>8,340</u> | <u>276,910</u> |
| | 236,250 | 2,469,793 | 81,415 | 2,787,458 |

Killowatt Hours - A.C.

| | |
|-------|--------------|
| Jan. | 54,959 |
| Feb. | 47,653 |
| Mar. | 42,213 |
| Apr. | 43,923 |
| May | 33,120 |
| June | 29,642 |
| July | 31,015 |
| Aug. | 22,215 |
| Sept. | 15,588 |
| Oct. | 9,748 |
| Nov. | 1,832 |
| Dec. | <u>3,553</u> |

335,461

Total D.C. K.W.H. to Milwaukee City - 236,250 - North Feeder
Total A.C. K.W.H. to Milwaukee City - 335,461
Wisconsin ratio of conversion - 70.4%

POWER STATISTICS FOR YEAR - 1949

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

| | <u>Galvary Sub.</u> | <u>Skokie No. 30</u> | <u>Lake Ave. No. 31</u> | <u>Kotz Rd. No. 32</u> | <u>Deerfield Rd. No. 33</u> |
|-------|-------------------------|--------------------------|-----------------------------|----------------------------|---------------------------------|
| Jan. | 23,929 | 142,029 | 82,408 | 55,790 | 78,049 |
| Feb. | 17,628 | 140,139 | 80,148 | 50,090 | 73,899 |
| Mar. | 24,079 | 133,529 | 75,848 | 47,190 | 77,929 |
| Apr. | 31,889 | 119,809 | 71,848 | 54,990 | 77,239 |
| May | 57,288 | 79,069 | 69,848 | 50,190 | 69,949 |
| June | 54,435 | 92,889 | 51,948 | 43,890 | 64,459 |
| July | 38,269 | 105,649 | 64,818 | 48,290 | 69,719 |
| Aug. | 21,117 | 122,469 | 66,204 | 53,322 | 70,929 |
| Sept. | 22,016 | 112,589 | 79,342 | 46,790 | 64,569 |
| Oct. | 1,268 | 131,949 | 60,576 | 52,390 | 59,919 |
| Nov. | 3,370 | 115,819 | 83,518 | 54,390 | 66,719 |
| Dec. | 6,213 | 110,289 | 88,138 | 79,290 | 79,169 |
| | 301,501 | 1,406,248 | 874,645 | 636,612 | 852,548 |

| | <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. | 57,690 | 34,038 | 106,261 | 63,000 | 204,818 |
| Feb. | 54,590 | 34,248 | 108,699 | 58,200 | 200,518 |
| Mar. | 52,690 | 34,858 | 103,789 | 67,770 | 216,418 |
| Apr. | 53,190 | 33,458 | 88,869 | 58,730 | 198,018 |
| May | 48,890 | 31,178 | 77,199 | 59,010 | 204,118 |
| June | 46,890 | 21,708 | 58,319 | 51,740 | 173,627 |
| July | 45,490 | 24,578 | 52,319 | 48,580 | 160,618 |
| Aug. | 43,790 | 28,238 | 60,979 | 49,500 | 163,418 |
| Sept. | 47,990 | 84,088 | 91,099 | 47,196 | 155,518 |
| Oct. | 50,790 | 23,188 | 63,029 | 44,720 | 157,318 |
| Nov. | 53,190 | 25,998 | 80,129 | 47,720 | 171,818 |
| Dec. | 64,190 | 37,598 | 99,359 | 47,080 | 186,518 |
| | 619,380 | 413,176 | 990,050 | 643,246 | 2,192,725 |

POWER STATISTICS FOR YEAR - 1949

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

| | <u>Ravinia No. 39</u> | <u>Ft. Sheridan No. 40</u> | <u>No. Chicago A. 24</u> | <u>Waukegan No. 43</u> | <u>Beach No. 44</u> |
|-------|---------------------------|--------------------------------|------------------------------|----------------------------|-------------------------|
| Jan. | 249,790 | 187,690 | 145,000 | 134,833 | 31,130 |
| Feb. | 242,890 | 185,190 | 138,630 | 135,960 | 27,240 |
| Mar. | 267,890 | 192,790 | 139,051 | 132,950 | 29,010 |
| Apr. | 244,490 | 157,703 | 112,680 | 129,480 | 22,530 |
| May | 228,590 | 150,590 | 117,626 | 112,900 | 24,560 |
| June | 204,291 | 124,690 | 107,010 | 100,940 | 23,760 |
| July | 197,090 | 107,590 | 99,920 | 95,620 | 19,660 |
| Aug. | 194,990 | 113,990 | 104,134 | 102,140 | 24,150 |
| Sept. | 191,390 | 142,890 | 136,710 | 114,950 | 20,180 |
| Oct. | 199,790 | 137,208 | 104,980 | 108,120 | 16,260 |
| Nov. | 213,590 | 159,578 | 111,640 | 121,950 | 17,730 |
| Dec. | 247,490 | 171,290 | 125,030 | 132,320 | 26,600 |
| | 2,682,281 | 1,831,199 | 1,442,411 | 1,422,163 | 282,810 |

| | <u>W. Harbor No. 45</u> | <u>Lake Bluff No. 80</u> | <u>No. Chicago No. 42</u> |
|-------|-----------------------------|------------------------------|-------------------------------|
| Jan. | 100,200 | 393,370 | 1,000 |
| Feb. | 94,400 | 381,070 | 1,000 |
| Mar. | 99,500 | 411,080 | 1,000 |
| Apr. | 86,900 | 393,850 | 1,000 |
| May | 76,600 | 363,280 | 1,000 |
| June | 82,880 | 336,420 | 1,000 |
| July | 69,220 | 348,070 | 1,000 |
| Aug. | 75,300 | 350,340 | - |
| Sept. | 69,900 | 155,350 | - |
| Oct. | 73,500 | 352,170 | - |
| Nov. | 82,800 | 359,740 | - |
| Dec. | 95,700 | 385,580 | - |
| | 1,006,900 | 4,230,320 | 7,000 |

Total K.W.H. P.S. D.C. - less auxiliary load = 21,522,517 K.W.H.

POWER STATISTICS FOR YEAR 1949

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

| | <u>Kotz Road Signals No. 32</u> | <u>Old Mill Road Signals No. 34</u> | <u>Highwood Shops</u> | <u>Skokie Shops</u> |
|-------|---|---|---------------------------|-------------------------|
| Jan. | 11,530 | 10,450 | 31,500 | 36,070 |
| Feb. | 11,010 | 10,720 | 19,460 | 20,900 |
| Mar. | 10,950 | 10,640 | 23,010 | 21,520 |
| Apr. | 10,340 | 10,320 | 19,710 | 14,860 |
| May | 9,450 | 9,460 | 17,740 | 12,070 |
| June | 9,060 | 9,490 | 15,880 | 11,620 |
| July | 9,040 | 9,480 | 15,780 | 10,490 |
| Aug. | 8,920 | 9,390 | 14,930 | 11,270 |
| Sept. | 9,470 | 9,670 | 15,700 | 12,600 |
| Oct. | 10,470 | 10,610 | 18,310 | 17,020 |
| Nov. | 9,960 | 11,290 | 20,270 | 20,740 |
| Dec. | <u>12,310</u> | <u>12,520</u> | <u>23,840</u> | <u>28,260</u> |
| | 122,510 | 124,040 | 236,130 | 217,420 |

| | <u>Glencoe Signals</u> | <u>Kenilworth Signals</u> | <u>Howard St. Station</u> | <u>Zion Signals</u> | <u>Waukegan Signals</u> |
|-------|----------------------------|-------------------------------|-------------------------------|-------------------------|-----------------------------|
| Jan. | 7,000 | 7,600 | 9,044 | 2,080 | 6,360 |
| Feb. | 4,400 | 4,400 | 8,222 | 1,840 | 5,400 |
| Mar. | 5,000 | 5,200 | 9,000 | 2,000 | 6,120 |
| Apr. | 4,400 | 4,500 | 8,327 | 1,920 | 5,880 |
| May | 4,000 | 4,100 | 8,499 | 2,040 | 6,120 |
| June | 4,200 | 4,400 | 7,568 | 1,960 | 5,520 |
| July | 4,000 | 4,300 | 8,010 | 2,000 | 6,000 |
| Aug. | 4,400 | 4,500 | 8,222 | 2,080 | 6,480 |
| Sept. | 4,200 | 4,700 | 7,482 | 2,000 | 6,060 |
| Oct. | 5,400 | 5,500 | 8,418 | 2,160 | 6,420 |
| Nov. | 5,200 | 5,100 | 8,762 | 1,960 | 6,000 |
| Dec. | <u>5,800</u> | <u>6,000</u> | <u>9,594</u> | <u>2,240</u> | <u>6,540</u> |
| | 58,000 | 60,300 | 101,148 | 24,280 | 72,900 |

Total Auxiliary A.C. Under D.C. Contract 1,016,728 K.W.H.

POWER STATISTICS FOR YEAR - 1949

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. | 70,500 | 93,930 | 39,700 | 112,300 | 20,136 | 27,540 |
| Feb. | 64,700 | 77,880 | 45,230 | 78,900 | 23,319 | 20,210 |
| Mar. | 63,900 | 78,240 | 43,560 | 87,100 | 21,228 | 24,020 |
| Apr. | 53,600 | 70,320 | 41,300 | 63,800 | 26,965 | 19,160 |
| May | 60,700 | 70,250 | 40,790 | 67,600 | 27,419 | 19,100 |
| June | 49,300 | 62,400 | 40,190 | 59,300 | 27,480 | 15,770 |
| July | 48,800 | 57,670 | 37,180 | 60,600 | 29,591 | 17,050 |
| Aug. | 55,300 | 51,600 | 45,660 | 76,500 | 5,788 | 32,960 |
| Sept. | 55,400 | 60,330 | 37,370 | 68,000 | 7,004 | 32,090 |
| Oct. | 51,500 | 60,250 | 38,970 | 69,700 | 5,378 | 34,090 |
| Nov. | 64,800 | 56,850 | 37,620 | 81,400 | 1,080 | 34,220 |
| Dec. | <u>51,400</u> | <u>65,930</u> | <u>46,630</u> | <u>76,700</u> | <u>5,270</u> | <u>37,870</u> |
| | 689,900 | 805,650 | 494,200 | 901,900 | 200,658 | 314,080 |

| | <u>Nechuta</u> | <u>Carrollville</u> | <u>College</u> | <u>Milwaukee</u> | D.C. <u>Wisconsin</u> <u>Elect.Co.</u> | W.Harbor <u>To Wisconsin</u> |
|-------|----------------|---------------------|----------------|------------------|--|---------------------------------|
| Jan. | 56,300 | 79,200 | 47,700 | 117,000 | 260,159 | 33,400 |
| Feb. | 65,200 | 63,300 | 54,400 | 118,000 | 226,301 | 31,467 |
| Mar. | 56,800 | 74,200 | 41,200 | 122,000 | 228,751 | 33,167 |
| Apr. | 63,800 | 47,400 | 39,800 | 110,100 | 196,883 | 28,967 |
| May | 70,400 | 45,500 | 58,200 | 94,800 | 192,225 | 25,533 |
| June | 56,100 | 42,500 | 18,300 | 74,000 | 169,612 | 27,627 |
| July | 47,100 | 38,500 | 42,200 | 82,000 | 181,036 | 23,074 |
| Aug. | 69,500 | 41,600 | 40,200 | 91,300 | 184,171 | 25,100 |
| Sept. | 42,200 | 49,700 | 35,400 | 76,900 | 187,154 | 23,300 |
| Oct. | 44,700 | 47,100 | 36,400 | 80,400 | 208,545 | 24,500 |
| Nov. | 42,400 | 53,300 | 36,000 | 91,100 | 241,781 | 27,900 |
| Dec. | <u>47,200</u> | <u>51,700</u> | <u>39,800</u> | <u>114,400</u> | <u>274,590</u> | <u>31,900</u> |
| | 661,700 | 634,000 | 489,600 | 1,172,000 | 2,551,208 | 335,935 |

Grand Total Converted in Wisconsin - 6,363,688 K.W.H.

POWER STATISTICS FOR YEAR 1949

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

| | <u>W. Harbor</u> | <u>Beach</u> | <u>Nechuta</u> | <u>Milwaukee</u> |
|-------|------------------|----------------|----------------|------------------|
| Jan. | 95,800 | 234,160 | 68,400 | 509,008 |
| Feb. | 91,000 | 188,800 | 78,000 | 499,438 |
| Mar. | 86,500 | 209,840 | 64,800 | 507,094 |
| Apr. | 89,200 | 138,960 | 75,600 | 467,248 |
| May | 77,900 | 138,000 | 84,000 | 440,974 |
| June | 78,100 | 121,760 | 68,400 | 396,604 |
| July | 74,700 | 141,930 | 74,400 | 401,708 |
| Aug. | 73,500 | 161,270 | 70,800 | 405,188 |
| Sept. | 79,500 | 143,200 | 57,600 | 402,926 |
| Oct. | 82,340 | 139,840 | 56,400 | 415,048 |
| Nov. | 94,900 | 125,360 | 52,800 | 435,464 |
| Dec. | <u>111,200</u> | <u>161,680</u> | <u>58,800</u> | <u>489,810</u> |
| | 1,034,640 | 1,904,800 | 810,000 | 5,370,510 |

Total A.C. to Wisconsin
 Total Converted in Wisconsin
 Efficiency - Wisconsin

9,119,950 K.W.H.
 6,363,688 K.W.H.
 69.7%

Total A.C. for Nechuta
 Total D.C. Converted - Nechuta
 Efficiency - Nechuta

810,000 K.W.H.
 661,700 K.W.H.
 81.7%

POWER STATISTIC FOR YEAR - 1949

Monthly K.W. Demand - Illinois Stations

| | <u>Power #30</u> | <u>Power #31</u> | <u>Power #32</u> | <u>Signals #32</u> | <u>Power #33</u> | <u>Power #34</u> |
|-------|----------------------|----------------------|----------------------|------------------------|----------------------|----------------------|
| Jan. | 516.6 | 313.3 | 293.3 | 18.3 | 376.6 | 363.3 |
| Feb. | 610 | 416.7 | 363.4 | 17.7 | 383.3 | 350 |
| Mar. | 586.6 | 356.6 | 320 | 16.6 | 336.6 | 353.3 |
| Apr. | 620 | 340 | 316.6 | 15 | 313.3 | 276.6 |
| May | 363.3 | 306.7 | 243.3 | 11 | 326.7 | 276.7 |
| June | 283.3 | 160 | 196.7 | 11.3 | 396.7 | 326.7 |
| July | 423.4 | 243.3 | 273.4 | 11.3 | 363.4 | 263.4 |
| Aug. | 463.3 | 214.6 | 291.3 | 11.6 | 340 | 290 |
| Sept. | 373.3 | 206.6 | 220.0 | 12.3 | 366.7 | 323.3 |
| Oct. | 413.3 | 190.0 | 250 | 12 | 390 | 346.7 |
| Nov. | 430 | 383.3 | 303.4 | 13.7 | 406.7 | 343.4 |
| Dec. | <u>303.3</u> | <u>303.3</u> | <u>306.6</u> | <u>14.3</u> | <u>410</u> | <u>393.4</u> |
| | 5,386.4 | 3,454.4 | 3,378 | 165.1 | 4,410 | 3,906.8 |

| | <u>Signals #34</u> | <u>Power #35</u> | <u>Libertyville #36</u> | <u>Central St. #37</u> | <u>Winnetka #38</u> | <u>Ravinia #39</u> |
|-------|------------------------|----------------------|-----------------------------|----------------------------|-------------------------|------------------------|
| Jan. | 16 | 260 | 296.6 | 223.3 | 650 | 670 |
| Feb. | 18.3 | 240 | 316.6 | 240 | 660 | 640 |
| Mar. | 14.3 | 226.6 | 286.6 | 220 | 686.6 | 670 |
| Apr. | 14.3 | 216.6 | 246.6 | 223.3 | 686.6 | 680 |
| May | 12 | 200 | 243.3 | 223.3 | 680 | 630 |
| June | 13.7 | 140 | 296.7 | 213.3 | 737.3 | 671.7 |
| July | 11.4 | 166.7 | 256.7 | 193.3 | 670 | 620 |
| Aug. | 11.6 | 203.3 | 283.3 | 180 | 633.3 | 600 |
| Sept. | 15.7 | 373.3 | 370.0 | 193.4 | 670.0 | 706.6 |
| Oct. | 13 | 233.8 | 313.3 | 216.7 | 700 | 740 |
| Nov. | 15.3 | 223.4 | 346.7 | 243.3 | 830 | 730 |
| Dec. | <u>15</u> | <u>153.4</u> | <u>370</u> | <u>240</u> | <u>773.3</u> | <u>766.6</u> |
| | 170.6 | 2,637.1 | 3,626.4 | 2,609.9 | 8,377.1 | 8,125.9 |

POWER STATISTIC FOR YEAR - 1949

Monthly K.W. Demand - Illinois Stations

| | <u>Power #40</u> | <u>Power #A24</u> | <u>Power #43</u> | <u>Power #44</u> | <u>Power #45</u> | <u>Power #80</u> |
|-------|----------------------|-----------------------|----------------------|----------------------|----------------------|----------------------|
| Jan. | 580 | 526.6 | 423.3 | 96.6 | 326.6 | 1,013.3 |
| Feb. | 523.3 | 506.6 | 433.3 | 100 | 346.6 | 1,000 |
| Mar. | 460 | 483.3 | 423.3 | 70 | 350 | 963.3 |
| Apr. | 413.3 | 393.3 | 440 | 90 | 426.6 | 863.3 |
| May | 467.7 | 416.7 | 393.3 | 80 | 296.7 | 860 |
| June | 573.4 | 493.3 | 303.3 | 120 | 173.3 | 963.3 |
| July | 406.7 | 413.3 | 316.7 | 96.7 | 190 | 873.3 |
| Aug. | 390 | 397 | 306.6 | 96.7 | 223.3 | 886.7 |
| Sept. | 613.3 | 620 | 366.7 | 103.3 | 143.4 | 310.0 |
| Oct. | 590 | 480 | 323.3 | 46.7 | 146.7 | 983.3 |
| Nov. | 546.7 | 506.7 | 340 | 73.3 | 233.4 | 920 |
| Dec. | 623.3 | 586.6 | 376.7 | 80 | 206.7 | 1,023.3 |
| | 6,187.7 | 5,823.4 | 4,446.5 | 1,053.3 | 3,063.3 | 10,659.8 |

| | <u>Highwood Shops</u> | <u>Skokie Shops</u> | <u>Kenilworth Signals</u> | <u>Glencoe Signals</u> | <u>Howard Stations</u> | <u>Waukegan Signals</u> | <u>Zion Signals</u> |
|-------|---------------------------|-------------------------|-------------------------------|----------------------------|----------------------------|-----------------------------|-------------------------|
| Jan. | 28.6 | 37 | 7.3 | 7.7 | 15 | 9 | 3 |
| Feb. | 28.6 | 27 | 8.6 | 9.0 | 15 | 10 | 3 |
| Mar. | 23 | 20.6 | 6.0 | 5.3 | 15 | 9 | 3 |
| Apr. | 15 | 7 | 3.6 | 3.0 | 15 | 9 | 3 |
| May | 17 | 4.3 | 2.0 | 3.0 | 15 | 9 | 3 |
| June | 12.7 | 12.3 | 2.0 | 3.0 | 14 | 9 | 3 |
| July | 12 | 9.0 | 2.0 | 3.0 | 14 | 10 | 3 |
| Aug. | 11 | 7.7 | 2.3 | 3.4 | 15 | 9 | 3 |
| Sept. | 20 | 13.7 | 2.4 | 3.0 | 14 | 10 | 3 |
| Oct. | 16.4 | 21.3 | 2.0 | 3.0 | 15 | 10 | 3 |
| Nov. | 22.7 | 28.7 | 6.0 | 6.3 | 16 | 9 | 3 |
| Dec. | 24 | 32.3 | 4.3 | 4.6 | 16 | 9 | 3 |
| | 231 | 220.9 | 48.5 | 54.3 | 179 | 112 | 36 |

POWER STATISTICS FOR YEAR - 1949

Monthly K.W. Demand As Run

| | Beach A.C. | Winthrop Harbor A.C. | P.S. A.C. Total | Milw. A.C. | Total A.C. | P.S. Co. D.C. | Total System |
|-------|---------------|----------------------------|--------------------|---------------|---------------|------------------|-----------------|
| Jan. | 830 | 250 | 1,080 | 1,484.3 | 2,564.3 | 7,075 | 9,639.3 |
| Feb. | 786.6 | 253.3 | 1,040 | 1,484.3 | 2,524.3 | 7,267 | 9,791.3 |
| Mar. | 703.6 | 286.6 | 990.2 | 1,470.2 | 2,460.4 | 6,906 | 9,366.4 |
| Apr. | 453.3 | 256.6 | 710 | 1,395.5 | 2,105.5 | 6,634 | 8,739.5 |
| May | 556.7 | 193.4 | 750.1 | 1,349.5 | 2,099.6 | 6,083 | 8,182.6 |
| June | 423.3 | 200 | 623 | 1,195.4 | 1,818.4 | 6,130 | 7,948.4 |
| July | 660 | 150 | 810 | 1,223.9 | 2,033.9 | 5,846 | 7,879.9 |
| Aug. | 660 | 270 | 727 | 1,223.6 | 1,950.6 | 5,874 | 7,824.6 |
| Sept. | 750 | 140 | 890 | 1,183.9 | 2,073.9 | 6,054 | 8,127.9 |
| Oct. | 566.7 | 230 | 797 | 1,212 | 2,009 | 6,459 | 8,468 |
| Nov. | 443 | 314 | 770 | 1,255.2 | 2,025.2 | 6,981 | 9,006.2 |
| Dec. | 606.6 | 206.7 | 813 | 1,410.3 | 2,223.3 | 7,039 | 9,262.3 |
| | 7,439.8 | 2,751 | 10,000 | 15,881.1 | 25,888 | 78,348 | 104,241 |

Monthly K.W. Demand as Billed

| | Beach A.C. | Winthrop Harbor A.C. | P.S. A.C. Total | Milw. A.C. | Total A.C. | P.S. Co. D.C. | Total System |
|-------|---------------|----------------------------|--------------------|---------------|---------------|------------------|-----------------|
| Jan. | 830 | 250 | 1,080 | 1,500 | 2,580 | 7,075 | 9,655 |
| Feb. | 786.6 | 253.3 | 1,040 | 1,500 | 2,540 | 7,267 | 9,807 |
| Mar. | 703.6 | 286.6 | 990.2 | 1,500 | 2,490.2 | 6,906 | 9,396.2 |
| Apr. | 453.3 | 256.6 | 756 | 1,500 | 2,256 | 6,634 | 8,890 |
| May | 556.7 | 193.4 | 756 | 1,500 | 2,256 | 6,083 | 8,339 |
| June | 423.3 | 200 | 756 | 1,500 | 2,256 | 6,130 | 8,386 |
| July | 660 | 150 | 810 | 1,500 | 2,310 | 5,846 | 8,156 |
| Aug. | 480 | 247 | 756 | 1,500 | 2,256 | 5,874 | 8,130 |
| Sept. | 750 | 140 | 890 | 1,500 | 2,390 | 6,054 | 8,444 |
| Oct. | 567 | 230 | 797 | 1,500 | 2,297 | 6,459 | 8,756 |
| Nov. | 443 | 314 | 770 | 1,500 | 2,270 | 6,981 | 9,251 |
| Dec. | 606.5 | 206.5 | 813 | 1,500 | 2,313 | 7,039 | 9,352 |
| | 7,260 | 2,727 | 10,214 | 18,000 | 28,214 | 78,348 | 106,562 |

Average Month Demand

| | |
|------------------------|------|
| Public Service Co. | D.C. |
| Public Service Co. | A.C. |
| Wisc. Elect. Power Co. | A.C. |

As Run

| |
|---------|
| 6,529 |
| 833.3 |
| 1,323.4 |
| 8,685.7 |

As Billed

| |
|-------|
| 6,529 |
| 851 |
| 1,500 |
| 8,880 |

POWER STATISTICS FOR YEAR - 1949

| | <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. | 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. A24 No. Chicago | 1,500 | 60 | 1 |
| x | No. 43 Pine St. | 1,900 | 60 | 1 |
| | No. 44 Beach | 1,000 | 25 | 1 |
| | No. 45 Winthrop Harbor | 1,200 | 60 | 1 |
| x | No. 80 Lake Bluff | <u>1,900</u> | 60 | <u>1</u> |
| | | 24,500 | | 19 |
| | 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. | 1,500 | 60 | 2 |
| | Carrollville | 1,000 | 25 | 2 |
| | College Ave. | 500 | 25 | 1 |
| | Harrison St., Milw. | <u>2,000</u> | 25 | <u>2</u> |
| | | 10,500 | | 15 |

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

ELECTRIC POWER SERVICE DIVISION

Summary

| <u>Crossing Protection</u> | <u>1949</u> | <u>1948</u> |
|-----------------------------------|-------------|-------------|
| Autoflag with Bell - Locations | 13 | 12 |
| Autoflag - No Bell - Locations | 3 | 4 |
| Bell and Light Signal - Locations | 3 | 4 |
| 600 Volt Bell on Gate - Locations | 14 | 14 |
| Electric Lighted Crossings | 63 | 63 |

Overhead Trolley

| | | |
|---|-------|-------|
| Catenary Construction - D.T. Miles | 32.04 | 32.04 |
| Wood and Steel Poles - Main Line - D.T. Miles | 69.94 | 69.94 |
| Steel Poles - Milwaukee - D.T. Miles | 3.35 | 3.35 |
| Wood Poles - Yards & Sidings - S.T. Miles | 42.26 | 42.26 |
| Wire Renewed - Miles | 7.85 | 2.0 |
| Wire Breaks | 22. | 4. |

Lighting

| | | |
|--------------------------------|-----|-----|
| Passenger Stations | 37 | 37 |
| Freight Stations | 8 | 8 |
| Shops and Car Houses | 4 | 4 |
| Substations | 10 | 10 |
| Office Buildings | 2 | 2 |
| Miscellaneous Buildings | 31 | 31 |
| Station Platforms and Shelters | 222 | 222 |
| Yards | 8 | 8 |

Substations

| | | |
|-----------|---|---|
| Manual | 3 | 4 |
| Automatic | 7 | 7 |

Transmission Line - Miles

| | | |
|---------------------------------|--------|-------|
| 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 | 52.2 | *51.3 |
| 25 cycle - 13,200 volt - 3 wire | ** 2.4 | 2.4 |

Feeder Cable - Single Wire Miles

| | | |
|---------------------|--------|---------|
| Cooper Feeder Cable | 169.28 | *169.76 |
|---------------------|--------|---------|

Bonding

| | | |
|---------------|-------|-------|
| Bonds Renewed | 3,024 | 2,300 |
|---------------|-------|-------|

*Corrected figure.

**Not in service

COMMUNICATIONS DIVISION

CHANGES IN TELEPHONE SERVICE

On May 27, 1949, the telephone service at 79 West Monroe Street, Chicago, was transferred to 105 West Madison Street during the process of moving the General Offices. This move was made at night without interruptions to service. A new 80 line PBX with 31 working terminals was installed terminating the Railway's A, B and despatch lines which formerly terminated in the C.T.A. PBX at 79 West Monroe Street. Two additional Bell Telephone lines were put in service from Chicago to Highwood, making a total of four leased lines between these two points. The new telephone number for these lines is AMBassador 2-6400.

Telephone facilities on the second floor of Highwood Office Building were revised and enlarged to accommodate the Purchasing and Stores Department and the Way, Structures and Power Department.

FACILITIES MAINTAINED

| | <u>1949</u> | <u>1948</u> |
|--------------------------------|-------------|-------------|
| Aerial Cable - Miles | 12.14 | 12.14 |
| Underground Cable - Miles | 26.66 | 26.66 |
| 2-Wire Open Line - Miles | 143.64 | 143.64 |
| Cable Terminals - All Classes | 119 | 119 |
| XYZ Cable Terminal Protections | 21 | 20 |
| Cable Houses | 37 | 37 |
| Telephone Booths | 58 | 58 |
| Telephone Boxes on Poles | 9 | 9 |
| Telephone Stations | 188 | 188 |
| Interlocking Plant Telephones | 14 | 14 |
| Dispatch Boards - 20 Line | 2 | 2 |

ENGINEERING

In addition to routine engineering work of preparing plans and estimates and doing necessary field work, the following special projects were carried out by the Way and Structures Department's engineering staff:

Handled all details in connection with moving of General Offices in Chicago from 79 West Monroe Street to 105 West Madison Street and transfer of Purchases and Stores Department from Chicago to Highwood. This involved making floor layouts for new offices, arranging for new carpets, lights, blinds and various services and supervising the work of remodeling and moving.

Moved the Milwaukee Office of the Claim Department from the Security Building to the Terminal.

Co-operated with the Chief Engineer's Office in various studies pertaining to the Eden's Parkway Project of the Cook County Highway Department.

Made surveys of various parcels of land sold by the Real Estate Department and made a property survey for the Racine Motor Coach Company at Racine.