

CHICAGO NORTH SHORE AND MILWAUKEE RAILWAY COMPANY

A N N A L R E P O R T

FOR THE YEAR 1946

SUPERINTENDENT, MAINTENANCE OF WAY, STRUCTURES  
& ELECTRIC POWER SERVICE

Highwood, Illinois  
February 28, 1947

CHICAGO NORTH SHORE and MILWAUKEE RAILWAY COMPANY

MAINTENANCE OF WAY, STRUCTURES and  
ELECTRIC POWER SERVICE DEPARTMENT

ANNUAL REPORT  
FOR THE YEAR 1946

## F O R E W O R D

This report is an account of the work accomplished by 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.

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TRACK AND ROADWAY DIVISION

ADDITIONS AND BETTERMENTS

BALLAST - HOWARD-DEMPSTER LINE - A.F.E. 4591

Both tracks from the north side of Oakton Street to the switches south of Dempster Tower were reballasted by Company forces. Existing cinder ballast was removed to bottom of ties and new stone ballast applied. The average raise was 6 inches. At Main Street the 2 gauntlet switches, south of the street, were moved to the north side; all ties in the crossing renewed and new plank and asphalt crossings installed. Cinder shoulders were built to standard section.

During the progress of this work, cinders were also unloaded on the fill between Hamlin Avenue and the Canal Bridge for widening the embankment. The southbound side has been finished and work started on the northbound. 48 cars of cinders and 69 cars of stone have been used to date.

INSTALLATION OF TIE PLATES IN ILLINOIS - A.F.E. 4473 and 4510

15,558 - 100# double shoulder tie plates were installed by Company forces on ties renewed in Main Line tracks in Illinois.

<u>SECTION</u>	<u>100# TIE PLATES</u>
3 - Eighwood	150
4 - Lake Forest	906
7 - Waukegan, West Line	481
8 - Zion	2,905
16 - Howard-Dempster	3,470
17 - Glenayre	3,398
18 - Briergate	1,712
20 - Deerpath	900
21 - South Upton	<u>1,636</u>
TOTAL	15,558

TRACK AND ROADWAY DIVISION

ADDITIONS AND BETTERMENTS - CONTINUED

INSTALLATION OF 100# RAIL ANCHORS IN ILLINOIS - A.F.E. 4493

1,872 - 100# Improved Fair Rail Anchors were installed by Company forces on Main Line Tracks in Illinois.

<u>SECTION</u>	<u>RAIL ANCHORS</u>
4 - Lake Bluff	200
16 - Howard-Dempster	1,280
17 - Glenayre	<u>392</u>
TOTAL	- 1,872

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

65# rail and special work was renewed with secondhand 80# material at the following locations:-

Northfield Yard	-	708 Track Feet and 2 Turnouts		
Pettibone Yard	-	Track No. 1	-	821 Track Feet
	-	Track No. 2	-	660 " "
	-	Track No. 5	-	673 " "
	-	Track No. 9	-	198 " "
Shore Line Coal Co.	-	Lead Track	-	561 " "
Glen Rock Avenue	-	Team Track	-	289 " "
	-	Rynksel Lead	-	452 " "
	-	Trestle Track	-	348 " "
	-	Storage Track	-	264 " "
Liberty Lake	-	Lead to Gravel Pit-	-	985 " "
		Track No. 2	-	880 " "
		Track No. 3	-	<u>560</u> " "

1,042 track feet of 80# rail, including 3 turnouts, were relaid with secondhand 100# material on the north end of the Oakton Street Interchange Track, south of Oakton Street, Skokie.

The Prairie Roads Company track at Northbrook was shortened 100 feet.

TRACK AND ROADWAY DIVISION

ADDITIONS AND BETTERMENTS - CONTINUED

REHABILITATION OF TRACK AND PAVEMENT - WAUKEGAN CITY LINES  
A.F.E. 4544

Complying with a request from the City of Waukegan, Railway forces removed the rails in Washington Street between Edison Court and West Street and replaced the brick pavement. The City resurfaced the street with asphalt, billing the Railway for the portion included in the track zone. 2,649 track feet of 91# rail was retired.

The flangeways on Washington Street from West Street to Utica Street were filled with asphalt.

The crossover from the northbound Main Line to the M.D. track and the connection to the old Washington Street Line were removed by Railway forces.

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

Work was started on construction of a switch track between 10th and 12th Streets, Waukegan, West Line to serve the Economy Coal Company Yard. To date part of the grading has been done by Economy Coal Company forces.

INSTALLATION OF CAM LOCKS ON FACING POINT SWITCHES - SYSTEM  
A.F.E.'s 4476, 4477 and 4478

A total of 47 Pettibone-Mulliken Co. cam locks was installed on Main Line facing point switches over the system. These were distributed as follows:

Howard-Dempster Line - including 14 gauntlet switches	- 17
Downeys - Skokie Line-	- 5
Valley Junction - Southbound	- 1
Harrison Street, Milwaukee	- 2
Shore Line - Including 10 gauntlet switches	- 20
Libertyville Line (Blanchards and Scale House)	- 2
TOTAL-	47

TRACK AND ROADWAY DIVISION

ADDITIONS AND BETTERMENTS - CONTINUED

INSTALLATION OF MECHANICAL SWITCHMEN - SYSTEM - A.F.E. 4543

Pettibone-Mulliken Company Mechanical Switchmen were installed at 5 locations replacing spring connecting rods.

Highwood Yard - Main Line Crossover - Southbound Switch.  
Highwood Yard - Northbound switch to Ladder Track.  
Edison Court - Southbound switch to Cut and Add Track.  
Harrison St., Milwaukee - Main Line Crossover - southbound switch.  
Harrison St., Milwaukee - Northbound Switch to Ladder Track.

INSTALLATION OF RECONDITIONED ANGLE BARS - A.F.E. 4551

4,614 pairs of 100# angle bars were renewed with reformed bars at various locations as follows:

<u>SECTION</u>	<u>ANGLE BARS</u>
7 - Waukegan, West	34 Pairs
9 - McKeon Road	2,318 "
15 - Milwaukee	135 "
17 - Glenayre	1,384 "
18 - Briergate	<u>743</u> "

TOTAL - 4,614 Pairs

4,063 pairs were renewed at other locations and charged to maintenance.

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

7,740 - 100# double shoulder tie plates were installed by Company forces on ties renewed in Main Line tracks in Wisconsin.

<u>SECTION</u>	<u>TIE PLATES</u>
9 - McKeown Road	1,900
10 - Kenosha	1,249
14 - Grange Avenue	4,177
15 - Milwaukee	<u>414</u>

TOTAL - 7,740



TRACK AND ROADWAY DIVISION

ADDITIONS AND BETTERMENTS - CONTINUED

RETIREMENT OF CROSSOVER - KENOSHA - A.F.E. 4574

The south crossover between the southbound main track and the House track at Kenosha Freight Station was removed.

EXTENSION OF SIDE TRACK - BIRCH ROAD - A.F.E. 4594

The side track south of Birch Road, Kenosha County, was extended south 165 feet, to serve a new industry. Construction consisted of secondhand 80# rail on new side track ties and cinder ballast.

RAIL RENEWAL - WISCONSIN - A.F.E. 4524

22,345 track feet of 80# A.S.C.E. Rail were relaid with new 100# R.E. Rail on both tracks between Oak Creek Crossover and Howell-Rawson Crossover. Work was done under single track operation by the Herlihy Mid-Continent Company.

BALLAST - WISCONSIN - A.F.E. 4565

The Herlihy Mid-Continent Company reballasted both tracks from Oak Creek Trestle to the south end of College Avenue curve, a total of 34,800 single track feet. Track was skeletonized from Oak Creek to Howell-Rawson Crossover and raised on new stone. North of Howell-Rawson, very little skeletonizing was done, the track being raised on the old ballast and dressed with new stone. Average lift was 4½ inches. High shoulders were cut down and low shoulders built up with cinders. Ties were renewed where necessary and all farm crossings renewed. All work was done under single track operation except the southbound track north of Howell-Rawson Crossover.

The following material was used:

3,278 Cross Ties  
100 Cars Stone Ballast  
2 Cars Gravel Fill  
14 Cars Cinders

Included in this job was the reconstruction of 1,605 square feet of concrete sidewalks at various crossings in Racine to complete the work done in 1945.

TRACK AND ROADWAY DIVISION  
ADDITIONS AND BETTERMENTS - CONTINUED

RETIREMENT OF CROSSOVERS IN WISCONSIN - A.F.E. 4529

The Main Line crossover south of Rawson Avenue, Milwaukee County, was retired by Herlihy Mid-Continent Company forces.

INSTALLATION OF 100# RAIL ANCHORS IN WISCONSIN - A.F.E. 4494

1,635 - 100# Improved Fair Rail Anchors were installed by Company forces on Main Line tracks in Wisconsin.

<u>SECTION</u>	<u>RAIL ANCHORS</u>
11 - Racine	480
13 - Carrollville	<u>1,155</u>
TOTAL -	1,635

RAIL RENEWAL ON SIDE TRACKS IN WISCONSIN - A.F.E. 4522

65# rail and special work was renewed with second-hand 80# material at the following locations: -

Tanck Avenue Yard, Kenosha -

Lead Track - 222 Track Feet  
Siding No. 1- 535 Track Feet

Milwaukee Terminal

Tracks No. 4 and 5 - 336 Track Feet

TRACK AND ROADWAY DIVISION

JOB ORDERS

TRACK EXTENSION - HOUGH COMPANY, LIBERTYVILLE - JOB ORDER 555

The Hough Company at Liberty Lake constructed a new concrete loading platform, 122 feet long and 34 feet wide, at the west end of and between the 2 tracks serving their plant. Railway forces extended the south track 190 feet using secondhand 80# rail on new ties and gravel ballast. Grading and ballast were furnished by the Hough Company. The balance of the south track was resurfaced with cinders. The west end of the north track was lowered to bring car floors level with the platform. Wheel stops were installed at the end of both tracks and both tracks electrified.

MAINTENANCE WORK

In addition to the routing work of maintaining the track and right-of-way, the following work was done and charged to Maintenance Accounts: -

Surfaced both tracks from South Avenue, Glencoe, to Braeside, Deerpath Avenue to Woodland Avenue, Lake Forest and from Lake Bluff to Downeys on the Shore Line.

Surfaced both tracks of the Oakton Street Curve.

Moved south switches of Oakton Street gauntlet tracks to north side of street.

On the Skokie Valley Line surfaced both tracks from Dempster Street to Winnetka Avenue, from Highmoor to Westleigh Road and from Downeys to North Chicago Junction.

Renewed 100# rail in the southbound curve from Kelly's Siding to Green Bay Junction, South Upton, Skokie Valley Line, with new 100# rail.

TRACK AND ROADWAY DIVISION  
MAINTENANCE WORK - CONTINUED

Renewed broken guard rail chairs at North Chicago Junction on all divisions.

Renewed all rails in curves between North Chicago Junction and Valley Junction, Milwaukee Division, with 80# relayer rail.

Renewed 3 frogs in Valley Junction Crossing.

Surfaced both tracks from 22nd Street to 14th Street, North Chicago, West Line.

Both tracks from Holdridge Road to 23rd Street, Zion, were reballasted. Track was raised on the old ballast and dressed with new stone. Average lift was 4 inches. Shoulders were widened and built up with cinders. All crossings were rebuilt, with new stone ballast and ties and plank and asphalt surfaces.

Surfaced both tracks from 75th Street to Roosevelt Road, Kenosha, from Burlington Road to Bose Road and through Klinkert Road curve. Also from College Avenue to Harrison Street, Milwaukee.

Renewed 100# rail on high rail of northbound track through curve south of Harrison Street, Milwaukee, with secondhand 100# rail.

Repaired and renewed expansion rails on 6th Street Viaduct.

Renewed curve at Fowler Street on the Viaduct. The track zone was repaved with sheet asphalt by the Badger Construction Company.

Renewed 80# rail, plates and rail clips on the 3 pits at Milwaukee Terminal with secondhand 80# rail.

Ground corrugated rails on both tracks between Harrison Street and Mitchell Street.

Renewed 100# rail on both tracks under the C. & N.W. Ry. Bridge at North Chicago Junction, Shore Line, with secondhand 100# rail.

TRACK AND ROADWAY DIVISION

MAINTENANCE WORK - CONTINUED

Surfaced both tracks from Arcady to the Des Plaines River and from Butterfield Road to Saint Mary of the Lake.

Renewed 4,063 pairs of 100# angle bars with reformed bars as follows:

<u>SECTION</u>	<u>ANGLE BARS</u>
7 - Waukegan, West	376 Pairs
8 - Zion	360 Pairs
14 - Grange Avenue	2,528 Pairs
15 - Milwaukee	302 Pairs
16 - Howard-Dempster	<u>497</u> Pairs
TOTAL -	4,063 Pairs

Secondhand 100# and 80" x 100" tie plates were installed on ties renewed as follows: -

<u>SECTION</u>	<u>TIE PLATES</u>	
	<u>100#</u>	<u>80"x100"</u>
3 - Highwood	606	412
4 - Lake Forest	300	894
5 - Libertyville	-	3,074
7 - Waukegan, West	354	-
9 - McKeown Road	-	20
10 - Kenosha	-	108
14 - Grange Avenue	310	762
17 - Glenayre	-	<u>120</u>
TOTAL -	1,570	5,390

Installed new plates and rail clips under the rails on the Inspection Pit at Mundelein.

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	267	-	-
3 - Highwood	738	191	65
4 - Lake Forest	2,642	-	-
5 - Libertyville	2,017	363	39
6 - Waukegan East Line	23	73	46
7 - Waukegan West Line	1,702	475	4
8 - Zion	3,412	-	66
9 - McKeown Road	1,041	156	4
10 - Kenosha	1,058	53	-
11 - Racine	10	91	-
12 - 4-Mile Road	-	-	-
13 - Carrollville	-	-	-
14 - Grange Avenue	2,449	-	-
15 - Milwaukee	638	35	24
16 - Howard-Dempster	2,981	350	277*
17 - Glenayre	2,294	887	188
18 - Briergate	1,104	76	9
20 - Deerpath	796	196	-
21 - South Upton	866	-	35
Total by Company Forces	24,038	2,946	757
*Includes 44 - 3rd rail chair ties			

By Herlihy Mid-Continent Company

#13 - Carrollville	1,382	-	-
#14 - Grange Ave.	1,250	-	-
Total by Contractor	2,632	-	-
<b>GRAND TOTAL - Ties Renewed</b>	<b>26,670</b>	<b>2,946</b>	<b>757</b>

BRIDGE AND BUILDING DIVISION

ADDITIONS AND BETTERMENTS

CONSTRUCTION OF OFFICE AT HOWARD STREET - A.F.E. 4590

A frame office 8'-0" x 12'-6" x 8'-6" high was built on the north end of the southbound platform at Howard Street for the Chief Collector of the C.R.T. Co. and men handling North Shore trains in Chicago. Construction was done by C.R.T. Company Forces and the cost divided equally between the C.R.T. and North Shore Companies.

BRIDGE PAINTING - HOWARD-DEMPSTER LINE - A.F.E. 4549

The Chicago Decorating Company painted the bridges on the Howard-Dempster Line from Chicago Avenue to the Drainage Canal. All structures were cleaned, spot coated and given two complete coats of structural paint.

Locations covered are:

Chicago Avenue  
Custer Street  
Ridge Avenue  
Asbury Avenue  
Dodge Avenue  
Hartrey Avenue  
Drainage Canal

The Railway Company furnished all material and insurance.

MISCELLANEOUS BUILDING WORK - HIGHWOOD YARD - A.F.E. 4546

The work of improving the Highwood heating plant was completed during the year by the Contractor, Thomas Killian. A new condensation pump was installed in a sump located at the west end of No. 4 Pit in the North Shop and connected to the pumps installed north of the Boiler Room in 1945.

All heating pipes, coils and traps in the 4 pits in the North Shop were replaced with new material.

BRIDGE AND BUILDING DIVISION

ADDITIONS AND BETTERMENTS - Continued

MISCELLANEOUS BUILDING WORK - HIGHWOOD YARD  
A.F.E. 4546 - Continued

A new one-story concrete block building 42' x 36' was built in the South Yard in the space between the Speeder Shop and the Blacksmith Shop. The east wall of the Speeder Shop was removed, forming one large room. A 5-inch concrete floor was laid in the new addition and the old Speeder Shop and a pit 4'-5" x 8'-0" was built to facilitate repairs to track motor cars. Two large folding door about 11 feet wide are located in the south wall. Roof is flat type wood construction and includes a skylight. The interior was painted white with grey wainscot.

Immediately north of the Shop building, a concrete block boiler room, 14' x 20' inside dimensions, was built. Floor is 5-inch concrete and roof is reinforced concrete beam and slab construction. A 9-section secondhand Ideal No. 4 Red Flash Boiler has been installed and connection to a new brick chimney. Radiation consists of two secondhand unit heaters located in the Shop building. One unit heater was built from an old truck radiator. Boiler capacity is sufficient to heat the Electrical and Tin Shops as well as the Speeder Shop and Blacksmith Shop.

A small room was built in the northwest corner of the Boiler House and a Goder gas fired incinerator installed to enable the Accounting Department to burn tickets and records.

All the above construction work was done by Railway forces .

CONSTRUCTION OF CONCRETE SIDEWALKS AT HIGHWOOD OFFICE - A.F.E. 4576

2,946 square feet of concrete sidewalk, 5 inches thick, were installed in front of the General Office Building, Annex and Barber Shop. Width varies from 4 feet to 6 feet. Jenkins and Boller were the contractors.



BRIDGE AND BUILDING DIVISION

ADDITIONS AND BETTERMENTS - Continued

IMPROVEMENTS TO SOUTH SHOP, HIGHWOOD BARN - A.F.E. 4577

The original sloping wood and brick floor in the Carpenter and Paint Shop at Highwood Barn was removed and a new 6-inch concrete floor laid on a level grade. The 2 existing tracks were removed and relaid with 80# relay rail on new treated main line ties and new stone ballast grouted to seal the voids. All rail joints inside the Barn were thermit-welded. Drainage is provided by gutters in the floor running parallel with the rails and emptying into a new sewer line which discharges into an existing sewer. A concrete block retaining wall was built at the west end of the Shop to support the corridor leading to the Armature Room and north shop. A 6-foot fire door was installed in the north wall to give access to the Main Shop and a stairway and door built in the south wall at the center of the Shop. Track work was done by Company forces and all other work by Jenkins and Boller, Contractors.

Company forces removed the frame office located in the northwest corner of the Shop and built a new frame office on a 4-inch concrete floor in the corridor east of the Armature Room. An 18" x 22" window was cut in the north wall to permit observation of the North Shop.

Existing steam radiators on south wall of South Shop were reset by Railway forces and a new return line installed by Thomas Killian, Sub-Contractor for Jenkins and Boller.

The Kelso-Burnett Company removed the 600 volt D.C. lighting system in the South Shop and installed a new 110 volt A.C. system. Fluorescent lights were installed over each machine and in the new office. General lighting is furnished by standard overhead fixtures.

This same contractor changed the power drive for the Shop machinery from 600 volt D.C. to 230 A.C.

BRIDGE AND BUILDING DIVISION

ADDITIONS AND BETTERMENTS - Continued

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

Work was begun by the Scown Building Company on the construction of a new concrete block building, 32'-4" x 34'-8", to replace the Mechanical Department Blacksmith Shop which was destroyed by fire.

At the end of the year the Contractor had wrecked the old frame building and started digging trenches for the foundations.

Railway forces fabricated the steel columns and roof trusses from 80# rail and made up the necessary steel bearing plates, tie rods and anchor bolts.

CONSTRUCTION OF STATION FACILITIES AT BUTTERFIELD ROAD - A.F.E. 4578

A standard low fill platform 32' x 8', standard "H" shelter and necessary lighting were installed by Company forces on the southbound track at Butterfield Road, Libertyville Line.

RETIREMENT OF STATION FACILITIES AT GREAT LAKES - A.F.E. 4579

Ticket collection facilities consisting of four frame ticket booths grouped under a frame canopy roof together with wood picket fence and electric lighting and heating and located at the South end of the southbound platform, at beginning of high platform, were retired by Company forces.

IMPROVEMENT OF PARKING FACILITIES AT EDISON COURT - A.F.E. 5003

The parking lot west of the station at Edison Court was enlarged and improved by Jenkins and Boller, Contractors. The entire site was leveled and a 6-inch layer of cinders spread. 614 cubic yards of cinders were used. A semi-circular enclosure was provided for taxi-cab parking and separated from the main lot by a row of used ties set in the ground. A bumper consisting of old trolley poles fastened to ties set in the ground was built on the east side of the lot and posts set to define parking limits. All posts were painted aluminum by Railway forces. The Electrical Division installed 600 volt flood lighting mounted on poles.

BRIDGE AND BUILDING DIVISION

ADDITIONS AND BETTERMENTS - Continued

CONSTRUCTION OF SHELTER AT HOLDRIDGE ROAD - A.F.E. 4560

The existing No. 3 shelter located on the southbound platform was retired and replaced with a standard "H" type shelter. All work was done by Company forces.

REPAIR CONCRETE FOUNDATIONS AT KENOSHA SUBSTATION - A.F.E. 4552

The existing concrete foundations under the outdoor equipment were rebuilt and repaired by Alfred Jensen, Contractor. A new mass concrete foundation was installed under the 3 oil transformers. Defective concrete in the 2 tower bases and the slab and piers under the lightning arrestors was removed and replaced.

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

An automatic substation building and yard was constructed east of the right-of-way, south of 7-Mile Road by Henry Danischefsky, General Contractor. The Contractor erected a one-story brick building 19'x40' with concrete floor and pit and precast roof, built concrete foundations for outdoor equipment, installed earth fill and stone paving in yard and around building, installed chain link fence around yard and built access road and runway to track.

Railway Company Electrical forces erected steel structure in yard and installed apparatus.

SHELTER AT COLLEGE AVENUE - A.F.E. 4558

The existing No. 3 shelter on the northbound platform was retired and replaced with a standard "H" type shelter. All work was done by Company forces.

BRIDGE AND BUILDING DIVISION

ADDITIONS AND BETTERMENTS - CONTINUED

IMPROVEMENTS AT MILWAUKEE BARN - A.F.E. 4547

The concrete floor between Tracks 1 and 2 and south of Track 1 to the south wall was removed and a new 6 inch concrete floor installed about 9 inches below top of rail and at same level as floors in rest of Barn. Drainage is provided by gutters in floor running parallel with rails and connected into new sewer lines which discharge into the catch basins in the pits. Concrete floors in Pits No. 1 and 2 were broken out and rebuilt to improved grade and cross-section including gutters along both sides of both pits. A new water line with 3-hose connections was installed under the floor between Tracks 1 and 2 and a new 3'x7' door cut in the south wall of the building at the east end. Henry Danischerfsky was the General Contractor on this work.

Railway forces leveled up the rails on the pits during the progress of the work.

The heating system was remodeled by the Maag Company. All steam mains, wall radiation, coils in pits and return lines were removed in the Barn and a 2-pipe vacuum return heating system installed. Unit heaters were installed in all pits and new radiators in the office and wash rooms. A new vertical condensate pump and receiver were located in a sump at the east end of Pit No. 3 and a 10,000 square foot, electrically driven vacuum pump installed in the Boiler Room. All steam feeder mains and branches are covered. Work remaining consists of installation of overhead, thermostatically controlled unit heaters.

BRIDGE AND BUILDING DIVISION

MAINTENANCE WORK

BRIDGES AND TRESTLES

The following repairs were made by Company Forces:

- INDIAN CREEK, NORTHFIELD - Renewed 2 piles, 2 caps and 1 brace.
- HIGHMOOR - Renewed 13 piles, 6 caps, 10 braces,  
5 stringers, 133 ties and  
17 guard rails.
- LAMB'S TRESTLE, HIGHMOOR - Renewed 10 piles, 3 caps, 1 brace,  
5 stringers, 34 ties,  
9 guard rails and 2 mudsills.
- SOUTH UPTON TRESTLE - Renewed 8 piles, 2 caps, 8 stringers  
and 6 guard rails.
- BEACH ROAD - Renewed all 48 ties and 12 guard rails.  
Raised bridge 5 inches by  
setting beams on 80# rails  
laid on the bridge seats.
- PUETZ ROAD - Renewed 2 braces only.
- LAYTON AVENUE - Renewed 14 piles, 5 caps, 4 braces,  
5 stringers and 4 ties.  
Rebuilt bulkheads at  
south end of both trestles  
and renewed 1 mudsill.
- LAYTON AVENUE MATERIAL  
TRESTLE - Renewed 1 cap and 1 plank in catwalk.
- AUSTIN AVENUE - Renewed 2 piles and 1 cap.
- VINE AVENUE MATERIAL  
TRESTLE - Renewed 6 piles, 4 caps, 2 braces  
2 stringers and 31 ties.

BRIDGE AND BUILDING DIVISION

MAINTENANCE WORK

BRIDGES AND TRESTLES - Continued

WOODLAWN AVENUE, LAKE FOREST - Renewed all 112 ties and 10 guard rails. Raised steel column under west beam at north end of south-bound bridge and set on a concrete pier.

CONTRACT WORK

The Chicago Decorating Company painted both main line bridges and the interchange track bridge over Cicero Avenue, U.S. 41, South of Oakton Street, Skokie. These structures were cleaned, spot coated and painted 1 full coat of aluminum.

The same contractor painted the bridge over U.S. 41 at Onwentsia Road. This bridge was cleaned, spot coated and painted 1 full coat of gray structural paint.

The Railway Company furnished all material and insurance.

The Herlihy Mid-Continent Company raised bents No. 6 and 7 on the Canal Bridge early in January to bring the track to proper grade. Bents were raised to required height with hydraulic jacks and steel plates inserted between concrete pier and sole plates of columns. Plates were electric welded together and coated with asphaltic material to keep out water.

BRIDGE AND BUILDING DIVISION

MAINTENANCE WORK

BUILDINGS AND PLATFORMS

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

Built new headlight and marker rack at Roosevelt Road, Chicago.

Built a new office at Wilson Avenue Station for the Manager of the Commissary Department.

At Dempster Tower all windows were replaced with check rail type sash. New screens and storm windows were built.

Extensive alterations and repairs were made to the Company owned house at Harrison Street, Skokie Valley Line.

Built a new storage room in the Ticket Office at Briergate Station, Skokie Valley Line.

Renewed all roof timbers, floor and stairways at Ravinia Subway. Lined the interior with asbestos board.

Repaired the second floor in the Public Service Building at Highwood for use as a storeroom.

Made extensive repairs to skylights on Highwood Car Repair Shops and installed a new doorway in the north wall for handling wheels and axles.

New oil houses were installed adjacent to the Tool Houses at 9th Street, Waukegan and at Beach Road. These were converted from 2-frame ticket office; retired from Great Lakes.

Frame and glass enclosures were built in the substations at Racine and Milwaukee to furnish office space for the operators and to conserve heat.

At Carrollville Substation ventilators were installed in all upper sash. The old pump house was removed. A 4-ply built-up roof was applied over all the building, except the Tower, by the South Side Roofing Company of Milwaukee.

BRIDGE AND BUILDING DIVISION

MAINTENANCE WORK

BUILDINGS AND PLATFORMS - Continued

A new 1-1/2" copper water service was installed at the Kenosha Passenger Station by the Zimmerman Plumbing and Heating Company of Kenosha.

The heating boiler at Milwaukee Barn was cleaned of scale and completely re-tubed by the Advance Boiler Company of Milwaukee.

At Milwaukee Terminal, the partition between the Record Room and the Auditorium was covered with sheet rock. The ceramic tiles at the Michigan Avenue entrance to the Terminal were renewed by the E. C. Neidner Company of Milwaukee.

A 4-ply built-up roof was applied over the north and south sections of the Freight House at 6th and Clybourn Street. The high center section was not reroofed. Work was done by the South Side Roofing Company.



BRIDGE AND BUILDING DIVISION

MAINTENANCE WORK

MACHINE SHOP

Repaired 13 frogs and 10 switch points.

Overhauled 7 Section Gang motor cars, 8 Maintainers' speeders, and 6 push cars. Made running repairs to all motor cars and push cars as required.

Built up crossing frogs at Ryan Tower, Mitchell Street, 6th & Clybourn, 3rd and Wells and Wisconsin Avenue by the arc-welding method.

Maintained all Way Department tools and work equipment.

Made and repaired parts for Signal and Interlocking Division.

Cut bars and pins and welded parts for Mechanical Department.

TIN SHOP

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

Renewed 25% of the gutters and downspouts on the Zion Station.

Installed new hot air furnaces in one Company House.

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

MISCELLANEOUS

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.

Repaired asphalt crossings on the system.

Operated the Weed Killer.

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

FENCING

73rd Street to 67th Street, Kenosha - both sides including industrial property	- 4,290 ft.
Oakwood Road - East Side	<u>1,320 Ft.</u>
Total Fence Rebuilt by Company Forces	5,610 Ft.

Installed new cattle guards and wing fences at Balbach farm crossing, south of College Avenue.

Repainted the chain link fence on the east side of the right of way at Elm Street, Winnetka.

On the Libertyville Line, the Cyclone Fence Co. rebuilt the existing fence between Milwaukee Ave. and Garfield Ave. on both sides of the right-of-way. Fence was completely renewed with steel posts and #9 gauge fabric. A total of 3,968 feet of fence was rebuilt.

On the west line in North Chicago, the Cyclone Fence Company started to rebuild the existing right-of-way fence on both sides between 13th Street and 20th Street. Work accomplished in 1946 was the removal of old fence and setting of steel corner and line posts between 20th Street and 16th Street.

BRIDGE AND BUILDING DIVISION

MAINTENANCE WORK

BUILDINGS PAINTED

<u>Location</u>	<u>Description</u>
Adams & Wabash Station	- Washed inside.
Wilson Avenue Station	- Painted inside and outside.
Linden Avenue Shelter	- Painted outside.
Lake Avenue Gate Tower	- Painted outside.
Forest Avenue Shelter	- Painted outside.
Kenilworth Shelters	- Painted outside.
Indian Hill Station and Subway	- Painted inside.
Ravinia Subway	- Painted inside.
Ravinia Tower	- Painted inside and outside.
Braeside Shelter & Tower	- Painted inside and outside.
Lincoln Avenue Shelter & Tower	- Painted inside and outside.
Highland Park Station	- Washed inside.
Highwood Avenue Station & Shelter	- Painted outside.
Washington Ave. Sec. House & Tool House	- Painted outside.
Washington Avenue Tower	- Painted inside and outside.
Highwood Speeder Shop	- Painted inside and outside.
Highwood Boiler Room	- Painted inside.
Sacred Heart Shelters	- Painted outside.
Farwell Gate House	- Painted inside and outside.
Farwell Shelters	- Painted outside.
Lake Forest Station & Flag Shanty	- Painted inside and outside.
Scott Street Shelter	- Painted outside.
Noble Avenue Shelters & Tool House	- Painted outside.
Arden Shore Shelter	- Painted outside.
Downeys East Line Station	- Painted outside.
Downeys West Line Station	- Painted outside.
Great Lakes Station & Shelters	- Painted outside.
22nd St. E. Line Shelter & Tower	- Painted inside and outside.
18th St. E. Line Shelter	- Painted outside.
Cyclone Shelters & Shanty	- Painted outside.
14th St. E. Line Shelters	- Painted outside.
12th St. E. Line Shelter	- Painted outside.
10th St. E. Line Shelter	- Painted outside.
Beach Section House	- Painted inside.
Zion Station	- Painted inside and part of outside.

BRIDGE AND BUILDING DIVISION

MAINTENANCE WORK

BUILDINGS PAINTED - Continued

<u>Location</u>	<u>Description</u>
McKeown Rd. Section House & Substation	- Painted inside.
Kenosha Substation	- Painted inside.
Bose Rd. Substation	- Painted inside.
Taylor Avenue Substation	- Painted inside.
Racine Station	- Washed inside.
4-Mile Road Substation	- Painted inside.
Carrollville Section House & Substa.	- Painted inside.
Milwaukee Terminal	- Painted basement and outside washed Waiting Room.
Lake Bluff Station	- Painted inside.
Rondout Shelters	- Painted outside.
Libertyville Station	- Painted inside.
Libertyville Section House	- Painted inside.
Mundelein Station	- Washed inside and painted stone trim.

COMPANY HOUSES DECORATED

<u>Location</u>	<u>Description</u>
546-550 Lincoln Avenue, Winnetka	- Painted outside stores and apartment.
550 Lincoln Avenue, Winnetka	- Painted inside apartment.
Liberty Lake - Lumber Dealers Supply Company	- Painted outside.

CONTRACT PAINTING

At Highwood, The Chicago Decorating Company painted the North and South Car Repair Shops, Armature Room and connecting passageway. All interior walls and ceilings were cleaned and spray painted white, steel trusses, crane rails and Kinnear doors painted 2 coats, interior trim and skylights painted one coat and all pipe and sprinkler lines painted in distinctive code colors. Exterior trim and skylights painted 2 coats. The Railway Company furnished all material and insurance.

SIGNAL AND INTERLOCKING DIVISION

ADDITIONS AND BETTERMENTS

INSTALLATION OF BLOCK SIGNAL SYSTEM - STATE LINE TO MILWAUKEE  
A.F.E. 4506 and 4507

This work was completed during the year by the installation of track circuits through the crossovers at Winthrop Harbor, McKeon Road, 64th Street, Kenosha, Oak Creek, Grange Avenue and Oklahoma Avenue. All work was done by Company forces.

IMPROVEMENT OF CROSSING PROTECTION AT 20th AND BROADWAY,  
NORTH CHICAGO - A.F.E. 4573

The existing track box operated autoflags at these two crossings were retired and replaced by track circuit controlled flasher light signals. Two signals are installed at each crossing, each equipped with front and back lamp units and the southwest signal at Broadway has two extra lamp units mounted to warn northbound traffic on Commonwealth Avenue. All work was done by Company forces.

INSTALLATION OF CROSSING GATES FOR NASH COMPANY - JOB ORDER #561

At the request of the Nash Motors Company, Railway forces installed 2 wire-connected manually operated crossing gates at each of the 2 Nash crossings in Kenosha. Frame cabins, built at the Carpenter Shop, were placed at each location and equipped with annunciators controlled through existing track circuits. The Nash Company bore all costs of installation and also operates and maintains the gates and appurtenances.

SIGNAL AND INTERLOCKING DIVISION

ADDITIONS AND BETTERMENTS - Continued

SIGNAL INSPECTOR

Made insulation tests of line cable from Indian Hill to Harbor Street, Glencoe, State Line to Kenosha and Austin Avenue to Harrison Street, Milwaukee.

Made insulation test of short-run wires and cables at South Upton Plant.

Made relay tests from 22nd Street, North Chicago to State Line.

Made circuit controller tests from Howard Street, Chicago to Milwaukee on the Main Line and from Indian Hill to Harbor Street, Glencoe on the Shore Line.

MAINTENANCE WORK

In addition to the routine work of maintaining interlocking plants, block signals and crossing protection devices, the following major items of work were done and charged to Operating Accounts: -

Oil burning switch lamps at North Chicago Junction were replaced with electric lights.

Two-way gate lamps were installed on street arms of automatic gates at 28 locations as follows: -

East Prairie Road  
Crawford Avenue  
Kostner Avenue  
Oakton Street  
Main Street  
Niles Center Road  
Dempster Street  
Simpson Street  
Glenview Road  
Winnetka Avenue

Willow Road  
Deerfield Road  
Berkley Road  
Scranton Avenue  
Mawman Avenue  
14th St., No. Chicago  
27th St., Zion  
75th St., Kenosha  
73rd St., Kenosha  
67th St., Kenosha

Roosevelt Rd., Kenosha  
64th St., Kenosha  
63rd St., Kenosha  
60th St., Kenosha  
52nd St., Kenosha  
W. Nicholson Road  
4th St., Libertyville  
Harbor St., Glencoe

SIGNAL AND INTERLOCKING DIVISION

MAINTENANCE WORK - Continued

Automatic gate pedestals at Glenview Road, Knollwood, Oakton Street and 52nd Street, Kenosha, were renewed after being damaged by automobiles.

Five automatic gate pedestals were replaced at the following locations overhauled in the Shop: -

Belvidere Street, Waukegan	- 1 Gate
21st Street, Zion	- 1 Gate
67th Street, Kenosha	- 1 Gate
East Prairie Road, Skokie	- 1 Gate
Oakton Street, Skokie	- <u>1 Gate</u>

Total - 5 Gates Overhauled

Forty-Four gate motors were repaired by the Holt Electric Company at Milwaukee.

Eighty-four relays were overhauled in the C.R.T. Co. Relay Shop.

Trunking was removed and underground cable and bootlegs installed at 5 signal locations in South Upton Plant and also at 14th and 16th Streets, North Chicago, Beach Road, 21st Street, Zion and the track cut at Wadsworth Road.

Bootlegs and track cables were relocated at 24 signal and crossing protection locations on the Skokie Valley Line. This work was necessitated by the moving of insulated joints during rail renewals in past year.

At Winnetka Avenue, Skokie Valley Line, the north-east automatic gate pedestal was relocated temporarily and both gate arms extended due to widening of road.

The smash gates at Valley Junction were renewed, including the electric wiring.

SIGNAL AND INTERLOCKING DIVISION

MAINTENANCE WORK - Continued

Manually controlled signals governing single track operation during rail and ballast work between Oak Creek and College Avenue were installed as needed. At the end of the job, these facilities were removed.

To provide quicker and more efficient service on emergency calls, a Night Maintainer has been stationed at Highwood from 4:00 P.M. to Midnight to handle calls in Illinois. Maintainers are on duty at Highwood, Kenosha and Racine on Sundays from 7:30 A.M. to Midnight. This additional coverage went into effect on December 26, 1946, and has been provided without additional forces by allowing a day off during the week for the men involved.



SIGNAL AND INTERLOCKING DIVISION

MAINTENANCE WORK

CROSSING GATE OPERATION

59 Automatic Gate Locations, including Middle Road

	<u>1946</u>	<u>1945</u>
Gates broken by automobiles	124	119
Other interruptions*	384	409

21 Manually Operated Crossing Gate Locations

Gates broken by automobiles	35	34
Other interruptions*	100	110

\*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	54	54
Automatic Gates & Flashers	5	5
Manual Gates	20	20
Flasher Signals	6	4
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

PURCHASE OF EQUIPMENT - A.F.E. 4555

The following items of equipment were purchased and charged to this A.F.E.:

1 Kalamazoo Model 27W Track Motor Car for the Bridge Gang.

1 South Bend Lathe, Model 117G for Speeder Shop.

Work was completed by the Crerar Clinch Coal Company on the installation of Perfex Heat Regulators with Barometric Damper Controls at 17 locations. 13 locations were completed in 1945. During 1946, equipment was installed at:

Edison Court Station  
Kenosha Station  
Racine Station  
Highwood Garage

2 Worthington 60 cubic foot, gasoline powered, Portable Air Compressors and 4 Worthington "Blue Brute" Tie Tampers were purchased and charged to A.F.E. 4591, the Howard-Dempster Line ballast job.

In addition the following items were purchased and charged to Operating: -

12 Barco Unit Tie Tampers  
1 Gorman-Rupp Water Pump for Plumbers  
1 Skill Grander - Model KS22 for Speeder Shop  
1 Premier Furnace Vacuum Cleaner  
2 1½-gallon Hauck Torches  
1 4-gallon Hauck Torch  
1 Jacobsen 18" Power Lawn Mower

3 - 100,000# center dump ballast cars were purchased by the Mechanical Department from the Santa Fe Railway and reconditioned for use in ballasting work.

WAY and STRUCTURES SUMMARY

	<u>1946</u>	<u>1945</u>
<u>Track Construction - Lineal Feet</u>		
Side Track Constructed	355	582
Side Track Retired	420	-

<u>Rail Installed - Single Track Feet</u>		
140#	200	-
102#	-	1,242
100#	23,387	100,058
80#	<u>9,243</u>	<u>1,612</u>
Total -	32,830	102,912

<u>Rail Renewed in Kind - Single Track Feet</u>		
100#	4,841	6,702
80#	<u>2,762</u>	<u>1,485</u>
Total -	7,603	8,187

<u>Rail Removed - Single Track Feet</u>		
127#	200	-
91#	2,649	3,796
80#	23,487	100,072
65#	<u>9,208</u>	<u>1,030</u>
Total -	35,544	104,898

<u>Tie Plates Installed</u>		
100#	23,298	43,716
100# Secondhand	1,570	-
80# x 100# Secondhand	<u>5,290</u>	<u>14,134</u>
Total -	30,258	57,850

<u>Angle Bars Renewed - Pairs</u>		
100#	8,677	7,169

SUMMARY - CONTINUED

	<u>1946</u>	<u>1945</u>
<u>Special Work</u>		
Crossovers Removed	3	2
Turnouts Installed	-	1
Crossings Built Up	4	5
Frogs Repaired	13	15
Switch Points Repaired	10	7
Thermit Welds	174	178

<u>Ties Renewed</u>		
Main Line	26,670	21,258
Side Track	2,946	1,364
Switch	713	909
Bridge	362	894
3rd Rail	<u>44</u>	<u>892</u>
Total -	30,735	25,317

<u>Ties Installed on New Work</u>		
Main Line - New	---	576
Side Track - New	355	410
Switch - New	---	39

<u>Ballast - Cars</u>		
Stone	432	387
Gravel	-	114

<u>Broken Rails</u>		
100#	-	1
80#	2	5

SUMMARY - CONTINUED

	<u>1946</u>	<u>1945</u>
<u>Crossings</u>		
Gumwood Crossings Installed	-	7
Asphalt Crossings Rebuilt	10	8
Plank Crossings Rebuilt	-	3
 <u>Bridge Repairs</u>		
Bridges Repaired	12	11
Bridges Painted	9	4
 <u>Painting</u>		
Buildings - Painted and Decorated	65	43
Company Houses Painted and Decorated	3	13
 <u>Crossing Protection</u>		
Automatic Gates Installed - Locations	-	2
Automatic Flashers Installed - Locations	2	-
Automatic Gates Damaged by Automobiles	124	119
Manual Gates Damaged by Automobiles	35	34
 <u>Fencing</u>		
Right-of-Way Fence Rebuilt -	9,578	114,370
 <u>Weed Killer</u>		
Two Applications - Single Track Miles	180	200
One Application - Single Track Miles	20	-
Total Solution Used - Gallons	72,550	76,000
 <u>Carload Material</u>		
Sand and Stone	469	522
Coal	23	32
Ties	94	69
Cinders	128	128
Miscellaneous	26	81
	<u>740</u>	<u>832</u>

ELECTRIC POWER SERVICE DIVISION

ADDITIONS AND BETTERMENTS

RETIREMENT OF TRACK IN WAUKEGAN - A.F.E. 4544

The trolley wire was removed on Washington Street from Edison Court to Utica Street at the time the track was taken up.

INSTALLATION OF BACK GUYS BETWEEN WAUKEGAN AND MILWAUKEE  
A.F.E.'s. 4533 and 4534

193 new anchors and back guys were installed on trolley poles between Waukegan and the State Line and 119 installations made in Wisconsin.

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

Railway forces installed the outdoor steel structure, set transformers and completed outside wiring. Inside equipment has been installed and wiring is in progress.

Wisconsin Electric Power Company forces built a new high tension line on the east side of the right-of-way from 6-Mile Road to the Substation.

At the close of the year the work was 85% completed.

MAINTENANCE WORK

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

Renewed 156 wood poles, 362 cross spans, 7 high tension cross arms, 258 - 45,000 volt transmission line insulators, 137 anchors and 425 back guys.

Renewed 8.16 miles of 4/0 trolley wire.

Renewed 6,489 - 400,000 C.M. Rail Bonds, including those installed on rail renewals.

POWER STATISTICS FOR YEAR 1946

POWER DISTRIBUTION

Wisconsin, exclusive of Milwaukee City  
Milwaukee City  
Wisconsin, including Milwaukee City  
Milwaukee D.C. furnished by Wisc. Elect. Co.  
Wisconsin D.C. furnished by Winthrop Harbor  
Wisconsin Total  
Illinois Total  
Total Purchased

K.W.H.  
K.W.H.  
K.W.H.  
K.W.H.  
K.W.H. A.C. & D.C.  
K.W.H. A.C. & D.C.  
K.W.H. A.C. & D.C.

1945  
17,048,275  
1,483,628  
14,531,903  
1,578,340  
414,617  
16,524,860  
39,948,562  
56,473,422

1946  
12,724,915  
812,679  
13,537,594  
2,386,305  
462,064  
16,385,963  
38,292,691  
54,678,654

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

12,809  
51,025,830  
45.5%

12,376  
53,708,921  
49.06%

12,398,219

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	-	5,755,776
February	-	4,972,682
March	-	5,106,563
April	-	4,616,219
May	-	4,207,298
June	-	4,263,218
July	-	4,159,912
August	-	4,349,981
September	-	4,132,217
October	-	4,417,959
November	-	4,228,994
December	-	<u>4,467,835</u>

Total 54,678,654

CAR MILES OPERATED

January	-	1,141,199
February	-	1,014,713
March	-	1,101,293
April	-	1,032,029
May	-	944,245
June	-	995,931
July	-	991,925
August	-	1,013,741
September	-	944,913
October	-	956,784
November	-	881,685
December	-	<u>860,978</u>

Total 11,879,436

Cost of power for year 1946 - Account 59 \$720,277.49  
Total car miles operated on North Shore power 11,879,436  
 $\$720,275.78 \div 54,678,654 = 1.317$  cents per K.W.H.  
 $54,678,654 \div 11,879,436 = 4.603$  K.W.H. per car mile  
 $4.603 \times 1.317 = 6.062$  cents per car mile - Account 59 Purchased Power  
Cost of electric energy per car mile at Substation A.C. & D.C. \$.0606  
Cost of electric energy per car mile at Substation D.C. Bus \$.0690

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



COST OF ELECTRICAL ENERGY FOR YEAR 1946

	<u>P.S. D.C.</u>	<u>P.S. A.C.</u>	<u>Wis. Elec. Co. A.C.</u>	<u>Wis. Elec. Co. D.C.</u>	<u>Wells St. D.C.</u>	<u>Galvray D.C.</u>
Jan.	\$ 49,687.07	\$ 6,937.85	\$ 8,405.77	\$ 3,138.47	\$ 46.17	\$ 1,041.95
Feb.	45,714.64	6,239.50	7,702.62	2,661.00	42.00	954.86
Mar.	46,113.55	6,191.41	7,766.63	2,924.95	45.99	989.51
Apr.	43,392.17	5,302.40	7,345.38	2,680.50	44.70	899.07
May	40,675.42	4,590.86	7,625.10	2,073.00	45.60	994.67
June	40,115.34	4,632.22	7,821.11	2,007.00	44.46	1,336.50
July	39,893.18	4,420.36	7,940.05	1,678.50	46.79	1,358.67
Aug.	44,174.81	4,632.91	7,949.83	1,878.00	46.25	1,192.05
Sept.	43,008.89	4,750.23	7,818.44	1,939.50	44.28	1,058.75
Oct.	44,840.43	4,818.04	7,922.02	2,005.50	46.41	1,116.93
Nov.	44,310.60	4,804.92	7,986.38	2,331.38	44.67	1,174.52
Dec.	44,997.99	4,892.27	8,312.84	2,658.00	52.88	1,208.17
	\$526,928.08	\$62,412.97	\$94,596.17	\$27,975.80	\$550.20	\$13,325.55

Cost per D.C. K.W.H. Public Service Company contract -  
 $\$526,928.08 \div 37,488,236 = 1.4$  cents per K.W.H.

Cost per A.C. K.W.H. Public Service Company contract -  
 $\$62,412.97 \div 5,349,096 = 1.17$  cents per K.W.H.

Cost per A.C. K.W.H. Wisconsin Electric Power Company contract -  
 $\$94,596.17 \div 8,188,496 = 1.15$  cents per K.W.H.

Cost per D.C. K.W.H. Wisconsin Electric Power Company contract -  
 $\$27,975.80 \div 2,386,305 = 1.2$  cents per K.W.H.

Cost per D.C. K.W.H. Chicago Rapid Transit Company contract -  
 $\$13,325.55 \div 1,266,519 = 1.05$  cents per K.W.H.

Average cost per K.W.H. system -  
 $\$725,788.85 \div 54,678,654 = 1.32$  cents per K.W.H.

POWER SUMMARY - YEAR 1946

2,645,828	No. 30 Skokie	D.C.
1,140,416	No. 31 Lake Ave.	D.C.
1,098,720	No. 32 Kotz Ave.	D.C.
1,181,758	No. 33 Deerfield Rd.	D.C.
1,223,810	No. 34 Old Mill Rd.	D.C.
668,886	No. 35 Laurel Ave.	D.C.
1,127,548	No. 36 Libertyville	D.C.
1,610,680	No. 37 Central St.	D.C.
3,478,216	No. 38 Winnetka	D.C.
3,919,280	No. 39 Ravinia	D.C.
3,532,580	No. 40 Ft. Sheridan	D.C.
1,122,000	No. 42 No. ChicagoNS	D.C.
3,519,540	No. A24 No. Chicago P.S. Co.	D.C.
2,772,160	No. 43 Waukegan	D.C.
599,277	No. 44 Beach	D.C.
1,386,200	No. 45 Winthrop Harbor	D.C.
5,755,810	No. 80 Lake Bluff	D.C.
205,100	Highwood Shops	
51,703	Waukegan Garage	
170,308	Skokie Shops	
109,700	Glencoe & Kenilworth Signals	
79,496	Howard St. Station	
89,220	Waukegan to State Line Signals	
<u>37,488,236</u>	Public Service Company Billings	D.C.
1,266,519	C.R.T. Company Calvary	D.C.
38,754,755	Total Purchased, Illinois	D.C.
462,064	Less Winthrop Harbor to Wisconsin	D.C.
<u>38,292,691</u>	Total - Illinois	D.C.
5,349,096	Public Service Company	A.C.
<u>43,641,787</u>	Total - Illinois	A.C. & D.C.
8,188,498	Wisconsin Electric Power Company	A.C.
2,386,305	Wisconsin Electric Power Company	D.C.
462,064	Winthrop Harbor to Wisconsin	D.C.
<u>54,678,654</u>	Total A.C. & D.C. Purchased	
-----		
990,900	McKeown Substation	D.C.
1,424,920	Kenosha Substation	D.C.
747,600	Bose Road Substation	D.C.
1,661,240	Racine Substation	D.C.
676,420	Quarry Substation	D.C.
769,610	Four Mile Substation	D.C.
1,217,000	Carrollville Substation	D.C.
780,500	College Avenue Substation	D.C.
1,864,900	Milwaukee Substation	D.C.
<u>10,133,090</u>	Total Converted in Wisconsin	D.C.
462,064	Winthrop Harbor to Wisconsin	D.C.
2,386,305	Wisconsin Electric Power Company	D.C.
<u>12,981,459</u>	Total to Wisconsin	D.C.
13,537,594	K.W.H. Wisconsin	A.C.
812,679	Less Milwaukee City	A.C.
<u>12,724,915</u>	K.W.H. A.C. to Wisconsin exclusive of Milwaukee City	
462,064	K.W.H. D.C. to Wisconsin from Winthrop Harbor	
<u>13,186,979</u>	K.W.H. to Wisconsin exclusive of Milwaukee City	

K.W.H. PURCHASED - YEAR 1946

	<u>P.S.Co. D.C.</u>	<u>P.S.Co. A.C.</u>	<u>D.C. C.R.T. Co.</u>
Jan.	3,979,951	645,380	115,103
Feb.	3,409,046	563,620	98,888
Mar.	3,526,629	578,880	97,729
Apr.	3,148,273	492,420	85,655
May	2,897,036	378,020	88,802
June	2,898,061	400,560	118,013
July	2,837,065	367,940	121,777
Aug.	3,003,720	376,916	108,044
Sept.	2,833,889	362,760	92,597
Oct.	3,082,924	383,960	102,159
Nov.	2,861,575	389,040	113,358
Dec.	<u>3,010,067</u>	<u>409,600</u>	<u>124,394</u>
	37,488,236	5,349,096	1,266,519

	<u>Wisc. Elect. Power Co. A.C.</u>	<u>Wisc. Elect. Power Co. D.C.</u>	<u>Wells St.D.C.</u>	<u>Total Wisc. Elect. D.C.</u>
Jan.	749,186	261,539	4617	266,156
Feb.	675,178	221,750	4200	225,950
Mar.	675,976	243,746	4599	248,345
Apr.	640,030	223,375	4470	227,845
May	666,130	172,750	4560	177,310
June	674,888	167,250	4446	171,696
July	688,576	139,875	4679	144,554
Aug.	700,176	156,500	4625	161,125
Sept.	676,918	161,625	4428	166,053
Oct.	677,150	167,125	4641	171,766
Nov.	666,304	194,250	4467	198,717
Dec.	<u>598,986</u>	<u>221,500</u>	<u>5288</u>	<u>226,788</u>
	8,188,498	2,331,285	55,020	2,386,305

Total D.C. K.W.H. Wisconsin Electric Company	2,386,305
Total A.C. K.W.H. Wisconsin Electric Company	8,188,498
Total D.C. K.W.H. Galvany	1,266,519
Total D.C. Public Service Company	37,488,236
Total A.C. Public Service Company	<u>5,349,096</u>
Grand Total A.C. and D.C. K.W.H.	54,678,654

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.	88,090	261,539	4617	354,246
Feb.	77,160	221,750	4200	303,110
Mar.	56,900	243,746	4599	305,245
Apr.	35,040	223,375	4470	262,885
May	36,750	172,750	4560	214,060
June	50,960	167,250	4446	222,656
July	53,130	139,875	4679	197,684
Aug.	49,950	156,500	4625	211,075
Sept.	36,870	161,625	4428	202,923
Oct.	37,520	167,125	4641	209,286
Nov.	39,380	194,250	4467	238,097
Dec.	<u>42,170</u>	<u>221,500</u>	<u>5288</u>	<u>268,958</u>
	603,920	2,331,285	55,020	2,990,225

Kilowatt Hours - A.C.

Jan.	114,407
Feb.	100,599
Mar.	77,671
Apr.	41,858
May	52,357
June	64,507
July	68,116
Aug.	66,158
Sept.	49,838
Oct.	52,256
Nov.	56,097
Dec.	<u>68,815</u>

812,679

Total D.C. K.W.H. to Milwaukee City - 603,920  
Total A.C. K.W.H. to Milwaukee City - 812,679  
Wisconsin ratio of conversion 74.4%

POWER STATISTICS FOR YEAR 1946

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

	<u>Galvary</u>	<u>Niles No. 30</u>	<u>No. 31</u>	<u>No. 32</u>	<u>No. 33</u>
Jan.	115,103	325,029	104,738	112,700	126,859
Feb.	98,888	265,749	93,388	92,300	102,659
Mar.	97,729	290,249	97,008	90,770	115,059
Apr.	85,655	249,249	84,978	93,750	95,699
May	88,802	207,649	96,898	82,460	91,179
June	118,013	171,129	108,198	94,330	96,279
July	121,777	164,079	97,218	88,660	95,309
Aug.	108,044	219,409	83,598	93,960	98,759
Sept.	92,597	214,329	75,868	84,220	89,909
Oct.	102,159	208,769	98,208	89,580	95,839
Nov.	113,358	161,009	102,818	81,920	87,279
Dec.	<u>124,394</u>	<u>169,179</u>	<u>97,498</u>	<u>94,070</u>	<u>86,929</u>
	1,266,519	2,645,828	1,140,416	1,098,720	1,181,758

	<u>No. 34</u>	<u>No. 35</u>	<u>No. 36</u>	<u>No. 37</u>	<u>No. 38</u>
Jan.	131,240	76,548	118,649	151,680	366,018
Feb.	109,950	66,188	98,279	126,440	308,818
Mar.	108,150	70,798	108,509	141,540	329,718
Apr.	99,030	63,118	82,489	126,030	302,518
May	103,690	39,738	80,759	123,940	270,318
June	108,160	39,858	80,979	117,150	267,518
July	97,610	42,528	73,749	120,810	277,118
Aug.	96,370	62,708	81,419	124,150	285,318
Sept.	93,240	47,948	85,369	118,890	271,218
Oct.	97,830	54,288	94,109	125,410	316,318
Nov.	90,360	46,428	103,989	160,880	240,618
Dec.	<u>88,180</u>	<u>58,738</u>	<u>119,249</u>	<u>173,760</u>	<u>242,718</u>
	1,223,810	668,886	1,127,548	1,610,680	3,478,216

POWER STATISTICS FOR YEAR 1946

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

	<u>No. 39</u>	<u>No. 40</u>	<u>No. 80</u>	<u>No. 42</u>
Jan.	389,990	402,090	588,300	126,200
Feb.	336,390	349,990	507,050	122,300
Mar.	366,390	316,990	531,200	114,800
Apr.	333,990	304,490	475,320	94,000
May	321,690	262,990	447,300	67,200
June	305,190	254,390	493,270	86,600
July	306,490	255,390	459,180	80,700
Aug.	312,190	275,390	470,000	76,700
Sept.	300,690	253,990	446,670	74,600
Oct.	339,990	293,190	463,760	95,700
Nov.	299,790	273,590	431,440	89,500
Dec.	306,490	290,090	442,320	93,700
	<u>3,919,280</u>	<u>3,532,580</u>	<u>5,755,810</u>	<u>1,122,000</u>

	<u>No. A24</u>	<u>No. 43</u>	<u>No. 44</u>	<u>No. 45</u>
Jan.	379,820	320,350	57,950	123,900
Feb.	320,220	269,980	54,430	116,100
Mar.	318,660	262,790	58,220	135,200
Apr.	282,260	234,690	47,070	123,700
May	296,210	201,830	45,820	111,500
June	254,080	223,290	50,667	99,400
July	269,050	206,970	50,620	103,200
Aug.	281,530	221,620	51,230	119,800
Sept.	256,280	203,080	44,830	119,300
Oct.	278,940	206,060	45,830	123,200
Nov.	275,620	205,320	43,410	104,700
Dec.	306,870	216,180	49,200	106,200
	<u>3,519,540</u>	<u>2,772,160</u>	<u>599,277</u>	<u>1,386,200</u>

POWER STATISTICS FOR YEAR 1946

Auxiliary Power Furnished Under  
U.S. 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 N. Chgo. - State Line</u>
Jan.	24,000	6,387	20,500	11,200	7,983	7,820
Feb.	20,600	5,542	18,200	9,800	7,713	6,960
Mar.	22,500	5,969	18,600	10,600	7,649	7,260
Apr.	15,400	4,566	12,100	7,900	7,906	8,020
May	11,700	3,224	11,600	7,300	4,981	7,060
June	13,500	2,871	11,400	7,100	5,542	7,160
July	13,000	2,912	10,800	7,800	5,972	7,900
Aug.	14,200	3,229	11,100	7,700	5,880	7,460
Sept.	15,400	3,630	11,800	8,900	6,108	7,620
Oct.	16,600	4,501	11,900	9,300	6,102	7,500
Nov.	18,300	4,884	14,800	10,300	7,380	7,240
Dec.	19,900	5,988	17,508	11,800	6,280	7,220
	<u>205,100</u>	<u>51,703</u>	<u>170,308</u>	<u>109,700</u>	<u>79,496</u>	<u>89,220</u>

No. Chicago State Line Signals	- 89,220
Oakton Street Shops	- 170,308
Highwood Shops	- 205,100
Waukegan Garage	- 51,703
Howard Street Station	- 79,496
Winnetka Signals	- <u>109,700</u>

Total Auxiliary 705,527

Public Service D.C. contract load factor - 46.6%

POWER STATISTICS FOR YEAR 1946

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>
Jan.	93,200	147,710	65,330	199,580	63,740
Feb.	95,900	144,390	59,800	140,900	57,460
Mar.	85,700	145,420	62,850	168,710	58,300
Apr.	85,000	125,820	61,540	160,680	59,420
May	72,800	90,500	51,920	118,060	59,920
June	84,900	125,940	68,380	121,640	73,380
July	83,400	123,520	69,650	123,200	53,100
Aug.	76,200	106,000	67,980	123,610	61,710
Sept.	74,800	103,220	64,860	129,400	58,780
Oct.	83,100	95,010	68,890	122,850	55,170
Nov.	73,700	106,900	45,980	122,470	37,900
Dec.	<u>82,200</u>	<u>110,490</u>	<u>60,420</u>	<u>130,140</u>	<u>37,540</u>
	990,900	1,424,920	747,600	1,661,240	676,420

	<u>4 Mile</u>	<u>Garrollville</u>	<u>College</u>	<u>Milwaukee</u>	<u>Wisconsin Elect. Co.</u>	<u>Win. Harbor To Wisconsin</u>
Jan.	74,370	107,800	66,700	256,600	266,156	41,300
Feb.	75,200	95,200	69,200	212,600	225,950	38,700
Mar.	57,350	105,300	69,600	178,100	226,349	45,066
Apr.	68,860	112,900	71,800	143,600	249,841	41,233
May	65,200	90,600	63,200	121,200	177,310	37,166
June	67,090	117,900	69,000	122,700	171,696	33,133
July	61,210	96,200	70,100	143,400	144,554	34,400
Aug.	67,780	102,100	62,900	144,700	161,125	39,933
Sept.	60,880	90,200	62,600	124,000	166,053	39,766
Oct.	55,950	88,900	58,400	133,300	171,766	41,067
Nov.	56,610	95,000	61,200	141,800	198,717	34,900
Dec.	<u>59,110</u>	<u>114,900</u>	<u>55,800</u>	<u>142,900</u>	<u>226,788</u>	<u>35,400</u>
	769,610	1,217,000	780,500	1,864,900	2,386,305	462,064

Total converted in Wisconsin - 10,133,090 K.W.H.



POWER STATISTICS FOR YEAR - 1946

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

	<u>W. Harbor</u>	<u>Beach</u>	<u>Milwaukee</u>
Jan.	196,500	448,880	749,186
Feb.	164,900	398,720	675,178
Mar.	183,600	395,280	676,976
Apr.	150,100	342,320	640,030
May	149,300	228,720	666,130
June	146,000	254,560	674,888
July	137,300	230,640	688,576
Aug.	149,476	227,440	700,176
Sept.	150,200	212,560	676,918
Oct.	141,960	242,000	677,150
Nov.	132,000	257,040	666,304
Dec.	<u>145,200</u>	<u>264,400</u>	<u>696,986</u>
	1,846,536	3,502,560	8,188,498

Wisconsin

Input A.C. K.W.H. - 13,537,594  
Output D.C. K.W.H. - 10,133,090  
Efficiency - 74.9%

Public Service Co. A.C. contract load factor - 35.9%  
Wisc. Electric Power Co. A.C. contract load factor - 57.6%  
System load factor A.C. - 46.8%  
System load factor A.C. & D.C. - 45.5%

POWER STATISTICS FOR YEAR - 1946

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.	870	378.9	390	17.3	473.3	480
Feb.	830	403.4	393.4	18.0	441.2	466.7
Mar.	826.7	376.6	346.7	16.0	433.4	460
Apr.	819.9	356.4	363.3	14.4	446.6	476.7
May	751.9	330	300	13.5	370	416.7
June	593.3	376.7	254.4	13.1	403.4	433.3
July	586.6	373.4	323.3	12.5	400	426.6
Aug.	740	350	316.6	12.1	406.7	373.4
Sept.	754	356.4	283.4	15.4	420	396.7
Oct.	760	383.3	366.6	14.7	406.7	426.6
Nov.	718.1	403.3	366.7	16.9	433.3	510
Dec.	730	403.3	366.7	16.8	433.3	413.3
	9,080.5	4,491.7	4,071.1	180.7	5,067.9	5,280

	<u>Signals</u> <u>#34</u>	<u>Power</u> <u>#35</u>	<u>Libertyville</u> <u>#36</u>	<u>Central</u> <u>street #37</u>	<u>Winnetka</u> <u>#38</u>	<u>Ravinia</u> <u>#39</u>
Jan.	16.9	310	363.3	286.6	786.7	896.7
Feb.	16.9	336.7	336.6	273.4	760	916.6
Mar.	14.6	306.7	383.4	276.7	756.6	866.7
Apr.	13.8	326.7	345.9	286.7	783.3	926.6
May	12.9	270	310	266.7	726.7	863.3
June	12.8	180	310	246.6	656.7	803.3
July	11.5	193.3	270	270	696.7	816.6
Aug.	13.2	313.3	273.3	274.8	700	840
Sept.	14.7	243.4	293.3	290	763.4	856.7
Oct.	13.1	260	293.3	290	823.3	903.4
Nov.	15.6	183.4	406.7	400	759.4	936.6
Dec.	16.8	323.3	403.3	423.3	850	996.7
	172.8	3,246.8	3,989.1	3,584.8	9,062.8	10,623.2

POWER STATISTICS FOR YEAR - 1946

Monthly K.W. Demand - Illinois Stations

	<u>Fort Sheridan #40</u>	<u>North Chicago #42</u>	<u>North Chicago #A.24</u>	<u>Waukegan #43</u>	<u>Beach #44</u>	<u>W.Harbor #45</u>	<u>L.Bluff #80</u>
Jan.	966.7	740	720	673.3	163.4	266.6	1,200
Feb.	960	720	710	646.6	133.3	333.4	1,236.6
Mar.	853.3	746.6	700	636.7	140	396.6	1,166.7
Apr.	860	760	666.7	576.6	156.7	343.3	1,146.7
May	770	563.4	796.6	601.6	156.7	370	1,140
June	700	660	693.8	680	200	313.3	1,166.7
July	713.4	660	712.4	620	180	370	1,186.6
Aug.	730	686.7	710	623.3	96.7	356.6	1,173.4
Sept.	686.6	676.7	693.4	586.7	156.6	356.4	1,160
Oct.	820	733.4	686.7	556.7	73.3	306.6	1,183.3
Nov.	903.3	770	736.7	586.7	110	333.3	1,343.3
Dec.	916.6	733.4	803.3	456.6	150	263.4	1,179.7
	9,909.9	8,450.2	8,629.6	7,244.8	1,716.7	4,009.5	14,283.0

	<u>Highwood Shops</u>	<u>Waukegan Garage</u>	<u>Oakton Shops</u>	<u>Winnetka Signals</u>	<u>Howard Street</u>	<u>Zion &amp; Waukegan Signals</u>
Jan.	21.6	7.1	37.3	9.0	14.5	14
Feb.	21.1	6.5	34.4	7.2	14	11.8
Mar.	19.7	5.2	26.3	5.9	13.5	11.8
Apr.	16.4	4.8	21.6	5.8	12.5	11.8
May	14.4	3.2	16.3	5.3	10.5	11.8
June	12.2	2.9	10.3	5.4	11.0	11.8
July	10.8	1.9	10.7	4.3	10.0	11.8
Aug.	10.2	2.4	9.4	4.7	10.0	11.2
Sept.	14.1	2.7	14.6	5.3	10.0	11.2
Oct.	12.9	3.5	11.4	5.3	10.5	11.2
Nov.	18.5	5.5	23.7	7.0	12.5	11.2
Dec.	18.4	5.5	27.5	8.0	12.0	11.2
	190.3	51.2	243.5	73.2	141.0	140.8

POWER STATISTICS FOR YEAR - 1946

Monthly K.W. Demand As Run

	Beach	Winthrop		Milw.	Total	P.S. Co.	Total
	A.C.	Harbor A.C.	P.S. A.C. Total	A.C.	A.C.	D.C.	System
Jan.	1,683.3	506.7	2,190	1624	3,814	10,103.2	13,917.2
Feb.	1,613.3	423.4	2,036.7	1624	3,660.7	10,027.7	13,688.4
Mar.	1,440.0	503.3	1,943.3	1624	3,567.3	9,786.4	13,353.7
Apr.	1,226.6	423.4	1,690.0	1623	3,313.0	9,743.2	13,056.2
May	1,266.7	370.0	1,636.7	1623	3,259.7	9,091.5	12,351.2
June	1,176.6	400.0	1,576.6	1623	3,199.6	8,751.0	11,950.6
July	903.3	360.0	1,263.3	1623	2,886.3	8,872.4	11,758.7
Aug.	946.6	386.7	1,333.3	1623	2,956.3	9,038.0	11,994.3
Sept.	883.3	406.7	1,290.0	1623	2,913.0	9,061.7	11,974.7
Oct.	863.4	403.3	1,266.7	1623	2,889.7	9,355.8	12,245.5
Nov.	1,010.0	406.7	1,416.7	1623	3,039.7	10,011.7	13,051.4
Dec.	893.3	413.4	1,306.7	1623	1,929.7	9,962.4	12,892.1
	13,946.4	5,003.6	18,950.0	19,479	37,429.0	113,805.0	152,234.0

Monthly K.W.H. Demand As Billed

	Beach	Winthrop		Milw.	Total	P.S. Co.	Total
	A.C.	Harbor A.C.	P.S. A.C. Total	A.C.	A.C.	D.C.	System
Jan.	1,683.3	506.7	2,190.0	1624	3,814.0	10,103.2	13,917.2
Feb.	1,613.3	423.4	2,036.7	1624	3,660.7	10,027.7	13,688.4
Mar.	1,440.0	503.3	1,943.3	1624	3,567.3	9,786.4	13,353.7
Apr.	1,266.6	423.4	1,690.0	1623	3,313.0	9,743.2	13,056.2
May	1,266.7	370.0	1,636.7	1623	3,259.7	9,091.5	12,351.2
June	1,176.6	400.0	1,576.6	1623	3,199.6	8,751.0	11,950.6
July	903.3	360.0	1,561.0	1623	3,184.0	8,872.4	12,056.4
Aug.	946.6	386.7	1,561.0	1623	3,184.0	9,038.0	12,222.0
Sept.	883.3	406.7	1,561.0	1623	3,184.0	9,061.7	12,245.7
Oct.	863.4	403.3	1,561.0	1623	3,184.0	9,355.8	12,539.8
Nov.	1,010.0	406.7	1,553.0	1623	3,176.0	10,011.7	13,187.7
Dec.	893.3	413.4	1,553.0	1623	3,176.0	9,962.4	13,138.4
	13,946.4	5,003.6	20,423.3	19,479	39,900.0	113,805.0	153,707.3

Average Monthly Demand

As Run

Public Service Co. D.C.	9,483.8	9,483.8
Public Service Co. A.C.	1,579.2	1,701.9
Wisc. Elect. Co. A.C.	1,623.3	1,623.3
System Max. A.C. & D.C.	12,686.3	12,809.0

POWER STATISTICS FOR YEAR - 1946

<u>Substation</u>	<u>Installed Capacity</u> <u>K.W.</u>	<u>Cycles</u>	<u>Number of Units</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., Waukegan	x 1,900	60	1
No. 44 Beach	1,000	25	1
No. 45 W. Harbor	1,200	60	1
x No. 80 Lake Bluff	x 1,900	60	1
	<u>25,800</u>	<u>950</u>	<u>21</u>
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	1
Garrollville	1,000	25	2
College Ave.	500	25	1
Milwaukee	2,000	25	2
	<u>10,500</u>	<u>320</u>	<u>14</u>
<b>Total</b>	<b>36,300</b>	<b>1,270</b>	<b>35</b>

\* Not Completed

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

ELECTRIC POWER SERVICE DIVISION

<u>Summary</u>	<u>1946</u>	<u>1945</u>
<u>Crossing Protection</u>		
Autoflag With Bell - Locations	12	14
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	55
<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	3.58	4.08
Wood Poles - Yards & Sidings - S.T. Miles	43.23	43.23
Wire Renewed - Miles	8.16	5.7
Wire Breaks	11.	13.
<u>Lighting</u>		
Passenger Stations	37	37
Freight Stations	9	9
Shelters	62	61
Shops and Car Houses	4	4
Substations	9	9
Office Buildings	2	2
Miscellaneous Buildings	31	31
Station Platforms	222	221
Yards	8	8
<u>Substations</u>		
Manual	4	4
Automatic	6	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	6,489	9,759