

CHICAGO NORTH SHORE AND MILWAUKEE RAILWAY

ANNUAL REPORT

FOR THE YEAR 1956

WAY, STRUCTURES AND POWER DEPARTMENT

Highwood, Illinois
May 9, 1958

FOREWORD

This report of work accomplished by the Way, Structures and Power Department during the year 1956 is brief due to the time which has elapsed prior to its preparation. It is a record, chiefly, of A.F.E. work and of such maintenance items as can be compiled from other office records.

SHORE LINE ABANDONMENT

During the year, the Commercial Salvage Company of Chicago removed all track, trolley wire, and most of the station facilities between Wilmette and Elm Place, Highland Park. The platforms and station building at Indian Hill, the station building and platforms at Hubbard Woods, the station building and northbound platform at Ravinia and the station building at Highland Park were not removed. Track in concrete pavement in Kenilworth and between Laurel Avenue and Central Avenue, Highland Park, was not removed. At these two locations the flangeways were filled with asphalt.

Between Elm Place, Highland Park, and a point 800 feet south of North Chicago Junction, the southbound track and trolley wire was removed. All station facilities, except Highwood Avenue, Lake Forest, and Great Lakes Main Gate were also removed.

All track, overhead and station facilities on the East Line from North Chicago Junction to Tenth Street were removed.

TRACK AND ROADWAY
ADDITIONS AND BETTERMENTS

RAIL RENEWAL, NILES CENTER ROAD TO CHURCH STREET -
A.F.E. 5345

5317 track feet of 100# rail was relaid with new 115# rail on the northbound track from the south side of Niles Center Road to the north side of Church Street. Of this total, 2808 track feet were relaid in December 1955. A Meco rail laying machine was rented from the C&NW Ry. to handle the new rail. In connection with this project the concrete crossing slabs in the northbound track at Dempster Street were replaced with standard plank and asphalt construction.

SIDETRACK CONSTRUCTION - HILL-BEHAN CO. - A.F.E. 5354

A new sidetrack was built to serve the Hill-Behan Lumber Co. located east of the right-of-way north of Highmoor. This track starts from a trailing point turnout in the northbound track and extends south and east onto the Industry's property. The portion on Railway property is 580 feet long and was built by company forces, using 100# relayer material on new ties and gravel ballast. The track on Hill-Behan property, which is 272 feet long, was built by the Industry. All but the south 100 feet of track is electrified. Earth fill was furnished by the Industry and finish grading done by a contractor. A No. 10 turnout was installed in the Railway portion of the new track to provide for the construction of a future track to extend south along the right-of-way to serve another industry.

RETIRE PORTION OF SIDETRACK AT WEST PARK AVENUE - A.F.E. 5368

At the request of the Public Service Company, Railway forces retired 23 track feet from the south end of the tail track at West Park Avenue.

RETIRE TAIL TRACK AT BRIERGATE - A.F.E. 5352

Retired the north 352 feet of the Briergate tail track and relocated the bumping post to the south side of Berkeley Road. This work was done in 1955 but overlooked in the preparation of the 1955 report. It is listed here for record purposes.

TRACK AND ROADWAY

ADDITIONS AND BETTERMENTS - cont'd.

SIDETRACK CONSTRUCTION - AMERICAN CAN CO. - A.F.E. 5357

An electrified sidetrack 150 feet long was built from a turnout in the switching lead south of Dugdale Road, extending southwesterly to the right-of-way line and a connection with a 262-foot track built by the Industry.

CLOSING OF 15TH STREET, NORTH CHICAGO - A.F.E. 5359

The grade crossing at 15th Street, North Chicago, was closed and barricaded on January 26, 1956. The plank and asphalt crossing and the concrete approaches were removed. Right-of-way fences on both sides were extended across the street. This work was done in connection with the installation of automatic gates and flashers at 17th Street, North Chicago.

CLOSING OF 13TH, 12TH AND CLARKSON STREETS, WAUKEGAN - A.F.E. 5361

The above three streets were closed and the crossings removed on the following dates:

13th Street	- June 28, 1956
12th Street	- June 28, 1956
Clarkson Street	- December 3, 1956

CROSSINGS AT 45TH AND 48TH STREETS, KENOSHA - A.F.E. 5338

To comply with the orders of the Wisconsin Public Service Commission and by agreement with the City of Kenosha, the crossing at 48th Street was closed and a new crossing opened at 45th Street. Railway forces installed a plank and asphalt crossing and a plank crosswalk and the City installed the approaches at 45th Street. The crossing at 48th Street was removed by company forces.

TRACK AND ROADWAY

JOB ORDERS

CROSSING FOR HOUGH COMPANY, LIBERTYVILLE - J.O. 1153

Pursuant to an agreement entered into with the Frank G. Hough Co., Railway forces constructed a 34-foot plank and asphalt crossing over the two main line tracks and one siding east of the substation at Liberty Lake. The turnout in the sidetrack leading to the gravel pit was lengthened in order to put the switch points outside the crossing. All cost of construction and maintenance was assumed by the Industry.

TRACK AND ROADWAY

MAINTENANCE WORK

TIES RENEWED

Ties were renewed by section forces as follows:

<u>Section</u>	<u>Main Line</u>	<u>Sidetrack</u>	<u>Switch</u>
1 - Dempster Street	1,731	10	6
2 - Glenayre	910	58	51
3 - Briergate	1,746	-	34
4 - South Upton	1,430	-	98
5 - Waukegan	23	171	68
6 - Zion	-	-	-
7 - Kenosha	7	-	57
8 - South Racine	92	-	-
9 - North Racine	40	-	-
10 - Carrollville	275	-	-
11 - Grange Avenue	-	-	-
12 - Milwaukee	-	-	-
13 - Libertyville	738	150	48
14 - Highwood	6	-	-
	<u>6,998</u>	<u>389</u>	<u>363</u>

TIE PLATES INSTALLED

New tie plates were installed with tie renewals as follows:

Section 1 - Dempster Street	-	36	-	115#	plates
Section 4 - South Upton	-	50	-	100#	"
Section 10 - Carrollville	-	144	-	100#	"

In addition, 10,000 secondhand, 100# double shoulder tie plates, salvaged from the Shore Line, were installed over the system. No accounting was made of these.

TRACK AND ROADWAY

MAINTENANCE WORK - cont'd.

In addition to the routine work of maintaining the track, cleaning ditches, greasing curves, filling switch lamps and fighting snow, the following work was done by track forces:

Surfaced northbound track from School Street to Simpson Street and southbound track from Simpson Street to Church Street, a distance of 2.3 single track miles, using a 4-tool pneumatic tie tamping outfit.

Installed 758 pair of 100# reconditioned angle bars on both tracks between Glenview Road and Indian Creek.

Removed the concrete crossing slabs at Glenview Road and installed standard plank and asphalt crossing.

The grade crossing at Wilmette Avenue, Glenview, was closed on October 24, 1956, and the crossing planks removed.

Removed the concrete crossing slabs in both main line tracks at Lake Avenue and installed standard plank and asphalt crossings. No work was done on the sidetrack crossing.

Repaired and extended crossing at 11th Street, Waukegan.

Crossing frogs at Ryan Tower were repaired by Teleweld Co.

Rebuilt sidetrack crossing over Route 176 at Liberty Lake.

Installed automatic safety switch stands at Mundelein on the east end of the south wye and at the west convergence point of the north wye.

Salvaged insulated joints, compromise joints and various pieces of special work from the abandoned Shore Line tracks.

FENCING

Rebuilt approximately 2400 feet of the east right-of-way fence from Simpson Street south.

BRIDGE AND BUILDING
ADDITIONS AND BETTERMENTS

SKOKIE VALLEY PARKING LOTS - A.F.E. 5348

This A.F.E. was issued in 1955 to cover cost of enlarging parking lots at all nine Skokie Valley stations and at Waukegan and the installation of A.C. floodlighting at each location. During the year 1956 extensions were made at Glenayre, Northbrook, Woodridge, Highmoor, and Deerpath.

At Glenayre a new area north of the street, approximately 70'x200' in size, was filled with old ballast trucked from the Shore Line.

At Northbrook the low area east of the station was developed for additional parking. A paving contractor was permitted to dump broken concrete and excavated materials to a depth of several feet to form a base. This material was then leveled and covered with old ballast trucked from the Shore Line. A new entrance driveway from Dundee Road was built on the east line of the property. Signs and barricade posts were installed to direct traffic into the parking area at the east side and out on the existing west drive next to the station.

At Highmoor the entrance from Half Day Road was relocated farther west due to sale of property. The approach apron was paved with concrete.

SKOKIE VALLEY PLATFORM EXTENSIONS - A.F.E. 5381

Station platforms were extended as follows, using standard fill platform construction and providing length for 6-car trains.

<u>Location</u>	<u>Northbound - Ft.</u>	<u>Southbound - Ft.</u>
Northbrook	6	96
Woodridge	112	112
Briergate	16	80
Highmoor	70	80
Sheridan Elms	151	154
Deerpath	80	80

BRIDGE AND BUILDING
ADDITIONS AND BETTERMENTS - cont'd.

RETIRE SECTION HOUSE - DEERPATH - A.F.E. 5377

Company forces retired the frame section house and coal house at Deerpath, Skokie Valley Line.

OFFICE EXTENSION, PETTIBONE YARD - A.F.E. 5372

The frame office building in Pettibone Yard was extended south 16 feet on a 12" concrete block wall foundation set on 6"x18" concrete footings. Interior was lined with celotex. Existing heating and lighting systems were extended into the new addition. Upon completion, the freight agent from the Main Gate station was moved to this office and the Main Gate station closed.

OIL BURNER, ZION STATION - A.F.E. 5365

A low-pressure oil burner, complete with oil storage tanks, clock-type thermostat and combustion chamber, was installed in the existing heating boiler by the Automatic Furnace Company of Waukegan.

SECTION GANG TOOL HOUSE, RACINE - A.F.E. 5339

In order to provide room for the two section gangs based at Taylor Avenue, Racine, the unused frame freight house at Libertyville was dismantled, moved to Racine, and reinstalled on wood posts. A new blacktop floor was installed. The old tool house was retired.

RETIRE FACILITIES AT FOUR-MILE ROAD - A.F.E. 5367

Company forces retired the shelter on the southbound platform, the section gang tool house and the porch on the section house. The balance of the section house was removed by others at no cost to the Railway.

RECONSTRUCTION OF COLLEGE AVENUE BRIDGE - A.F.E. 5379

On August 29, 1955, the Public Service Commission of Wisconsin issued an order to the Railway to reconstruct and widen the steel and timber bridge carrying College Avenue,

BRIDGE AND BUILDING

ADDITIONS AND BETTERMENTS - cont'd.

RECONSTRUCTION OF COLLEGE AVENUE BRIDGE - A.F.E. 5379 (cont'd.)

County Trunk Highway "ZZ", over the right-of-way. The City and County of Milwaukee were directed to contribute \$7500 each toward the cost of this work.

A contract was awarded to the Deckert Corporation on November 6, 1956, to repair and reconstruct the bridge. The City and County assumed the work of grading and paving the approaches and installation of guard rails. At the end of the year this project was 25% completed.

SOUTH STOREHOUSE AT HIGHWOOD - A.F.E. 5346

Butler Manufacturing Company completed the installation of a steel building 40'x80'x10' eave height on concrete foundations with a 5" reinforced concrete floor on sand fill. This building replaces the frame storehouse destroyed by fire on August 11, 1955. Company forces installed steel shelving, built a wooden ramp from high platform to ground level, and moved a small portable ticket booth into the building to provide office space.

BRIDGES AND BUILDINGS

MAINTENANCE WORK

BRIDGES, TRESTLES AND CULVERTS

The following repairs were made by company forces:

HIGHMOOR

Renewed 135 ties and 8 pieces of guard rail on the southbound track. Installed 270 secondhand 100# double shoulder tie plates.

LAMB'S CROSSING

Renewed 4 piles and 5 stringers and repaired bulkheads on the northbound trestle.

Renewed 14 piles, 2 mud sills, 2 caps, 9 stringers, 33 ties and 4 braces on the southbound trestle and installed 66 new 100# double shoulder tie plates.

SOUTH UPTON - MAIN LINE

Renewed one cap in each trestle.

OKLAHOMA AVENUE

Redecked both tracks installing 100 ties, 23 pieces of guard rail, new roofing paper and plank walk.

BRIDGE OVER C.M.ST.P.&P. RY. - RONDO UT

Renewed 56 ties and 6 pieces of guard rail on the northbound track.

BRIDGES AND BUILDINGS

MAINTENANCE WORK

BUILDINGS AND PLATFORMS

In addition to routine minor repairs to buildings and platforms, the following major work was done:

At Wilson Avenue, the Transit Authority installed a new heating boiler and oil burner replacing the old stoker and one of the old boilers.

Company forces replaced the automatic gas-fired water heater at Northbrook with a new 30-gallon Rheem heater.

The hot-air furnace at Woodridge Station was renewed by Automatic Furnace Company of Waukegan. The tenant installed an oil burner at the same time.

Rebuilt the front porch at Briergate Station.

Old shelters at 14th Street and 10th Street, Waukegan, were replaced with "H" type shelters taken from Sacred Heart on the Shore Line.

The roof on the shelter at Kenosha Station was repaired and had a cap sheet applied by A-1 Roofing Company.

Wrecked the Quarry Substation building after all equipment had been removed. This was charged to A.F.E. No. 5376.

The shelter at 6-Mile Road was removed to save the cost of repairs.

Removed station facilities at State Line Road, Kenosha Country Club, South Milwaukee Road, Howell Avenue, College Avenue, Duester's Crossing, Layton Avenue, and Austin Avenue. Authority to discontinue these local stops was received from the Wisconsin Public Service Commission.

A new 3-ply asphalt composition roof was applied to the Harrison Street, Milwaukee, Substation by the Winding Roofing Company. The concrete deck of the tower was coated with an Addex Roof Shield, which is an asphalt emulsion and glass fabric-type roofing. All brick work above the roof line, including the chimney and ventilator shaft, was tuckpointed and approximately 100 common brick were replaced. All copings were re-pointed. A heavy spray coat of silicone water repellent was applied to all brick work above the roof line. The same company repaired the roofs and flashing on the storehouse and garage at Harrison Street and applied a coat of hot waterproofing over the entire roof areas.

BRIDGES AND BUILDINGS

MAINTENANCE WORK - cont'd.

BUILDINGS AND PLATFORMS - cont'd.

Company forces constructed an enclosed ticket office in the Mundelein Station, mainly from material salvaged from the ticket office in the Great Lakes Main Gate station. Company forces also built a storm vestibule outside of the west station doors.

PAINTING

LOCATION

Wilson Avenue	Washed interior of station, including Commissary
Howard Street	Washed interior of station
Harmswoods	Washed waiting room
Glenayre	" " "
Northfield	" " "
Northbrook	" " "
Woodridge	" " "
Briergate	" " "
Highmoor	" " "
Sheridan Elms	" " "
Deerpath	" " "
Lake Bluff	Painted shelters
Pettibone Yard Office	" exterior
22nd St., North Chicago	" gate tower, shelter and signal shop
18th Street	Painted shelter
14th "	" "
10th Street, Waukegan	" "
Waukegan Trainmen's Room	" exterior
Milwaukee Terminal	" "
South Upton Section Houses	" " (2)
South Upton Tower	" "
Knollwood	" shelter
Scalehouse	" exterior
Rondout	" shelters (2)
Arcady	" railings
Thornbury	" shelter
4th St., Libertyville	" "
Libertyville Section House	" exterior
Highwood Office Building	" all offices except WS&P
" " "	" restaurant
Waukegan to Milwaukee	" all whistle signs

BRIDGES AND BUILDINGS

MAINTENANCE WORK

METAL TRADES

Repaired and maintained tools and equipment, including track motor cars, push cars, air compressors and Barco tytamers.

Repaired frogs and switch points.

Made gear racks for old-style automatic gates.

Maintained and serviced the Highwood boiler.

Made water coolers, flush tanks, water supply tanks, card holders, toilet chutes, destination sign box panels, car heater magazines, roof flanges, smoke jacks and ventilators for the Mechanical Department.

Maintained all heating and plumbing facilities on the system.

MISCELLANEOUS

Developed additional parking space on the old Shore Line right-of-way at North Chicago Junction.

Delivered supplies from storehouse to all locations south of Waukegan.

Inspected and serviced all fire extinguishers at stations, towers, section houses, substations and freight offices.

Operated the weed killer over the System.

WY AND STRUCTURES DIVISION

EQUIPMENT PURCHASED

TRACK MOTOR CARE - A.F.E. 5366

Purchased two No. 56A Kalamazoo motor cars complete with electric starter, generator, battery, steel cab, rail sweeps and coupler. Retired 3 Buda 19L cars - Railway numbers 8, 9 and 34.

WAY AND STRUCTURES SUMMARY

	<u>1956</u>	<u>1955</u>
<u>TRACK CONSTRUCTION - LINEAL FEET</u>		
Sidetrack constructed on R/W	730	2,803
Sidetrack retired	23	--
<u>RAIL INSTALLED - SINGLE TRACK FEET</u>		
115#	2,509	4,303
100#	580	3,963
80#	150	438
TOTAL	3,239	8,704
<u>RAIL REMOVED - SINGLE TRACK FEET</u>		
100#	2,509	4,303
80#	23	1,722
<u>TIE PLATES INSTALLED</u>		
100# New	194	9,927
100# Secondhand	10,000	--
115#	2,810	4,752
<u>100# RECONDITIONED ANGLE BARS INSTALLED</u>		
Pairs	758	--
<u>SPECIAL WORK</u>		
Crossovers Relocated	--	4
Turnouts Installed	3	7
Turnouts Removed	--	1
Crossings Built Up	1	2
<u>TIES RENEWED</u>		
Main Line	6,998	7,270
Sidetrack	389	363
Switch	363	91
Bridge	324	4
TOTAL	8,074	7,728

WAY AND STRUCTURES SUMMARY - cont'd.

	<u>1956</u>	<u>1955</u>
<u>TIES INSTALLED ON NEW WORK</u>		
Sidetrack - New	246	1,025
" - S.H.	43	170
Switch - New	126	404
<u>CROSSINGS</u>		
Concrete Slab Crossings Changed to Asphaltic	3	---
Asphaltic Crossings Rebuilt	2	---
Crossings Closed and Removed	6	---
Crossings Opened	1	---
<u>BRIDGE REPAIRS</u>		
Bridges Repaired	5	5
<u>PAINTING</u>		
Buildings Painted and Decorated	33	12
<u>FENCING - LINEAL FEET</u>		
R/W Fence Rebuilt	2,400	---
<u>WEED KILLER</u>		
One Application - Single Track Miles	160	160
Total Solution Used - Gallons	50,000	50,000
<u>CARLOAD MATERIAL</u>		
Sand and Stone	14	32
Coal	2	3
Ties	20	22
Cinders	48	41
Miscellaneous	6	4

COMMUNICATION AND SIGNALS DIVISION

ADDITIONS AND BETTERMENTS

AUTOMATIC GATE INSTALLATION, LAKE BLUFF - A.F.E. 5337

Replaced two Model "M" automatic gates at Scranton Avenue, Lake Bluff, with Griswold gates and flashers, including one sidewalk gate, one street gate with sidewalk arm and two-way flashing signals and one street gate with three-way flashing signals. Installed new southbound start and relocated cut-outs. At the same time the Model "M" automatic gate on the north side of Scranton Avenue at Rockland Avenue was removed.

The State of Illinois paid 50% of the cost of this work and the Village of Lake Bluff paid the remaining 50% of the cost of the sidewalk protection.

AUTOMATIC GATES AT 17TH STREET, NORTH CHICAGO - A.F.E. 5359

Installed two Griswold automatic gates with sidewalk arms and flashing light signals and two automatic sidewalk gates. Renewed existing 7 conductor aerial cable and messenger wire with 14 conductor self-supporting aerial cable between 20th Street and 14th Street. The grade crossing at 15th Street, North Chicago, was closed and barricaded as a part of this project. The new gates were put in service on June 6, 1956.

AUTOMATIC GATES AT 11TH STREET, WAUKEGAN - A.F.E. 5356

Installed two secondhand Griswold automatic gates with sidewalk arms and flashing light signals removed from the Shore Line and two new Griswold automatic sidewalk gates. Renewed existing 7 conductor aerial cable and messenger wire between 14th Street and Dugdale Road with new 14 conductor self-supporting aerial cable. The new gates were put in service on June 28, 1956.

AUTOMATIC GATES AT DUGDALE ROAD AND GLEN ROCK AVENUE, WAUKEGAN - A.F.E. 5380

Work was started on the installation of Griswold automatic gates with flashing light signals at the above two crossings to replace existing flasher signals. At the end of the year this work was 30% completed.

COMMUNICATION AND SIGNALS DIVISION

ADDITIONS AND BETTERMENTS - cont'd.

RENEW TELEPHONE CABLE, WAUKEGAN - A.F.E. 5355

Installed 1620 lineal feet of 11 pair plastic telephone cable on existing messenger wire replacing damaged 16 pair lead covered cable between Bridge M-58, south of Glen Rock Avenue, and bridge M-64, south of Washington Street.

SIGNAL PROTECTION CIRCUITS ON CROSSOVERS, WAUKEGAN - A.F.E. 5373

This A.F.E. provides for the installation of signal protection circuits on the main line crossovers north and south of Washington Street, Waukegan. The north crossover was completed on December 14, 1956. At the end of the year the south crossover was 50% completed.

AUTOMATIC GATES AT WASHINGTON STREET, CORNELIA AVENUE, AND BROOKSIDE AVENUE, WAUKEGAN - A.F.E. 5375

Installed Griswold automatic gates with flashing light signals, sidewalk arms and sidewalk gates at the above three crossings. Controls are arranged for normal and reverse movements and for clearing Washington Street and Cornelia Avenue when a northbound train is standing at the station. Two position gate indicating signals were installed under the station canopy for normal northbound moves and between the tracks south of Washington Street for reverse moves on the southbound track. Brookside Avenue was put in service on November 29, 1956, and Cornelia Avenue on December 3, 1956. Manually controlled autoflags at Cornelia, Clarkson and Brookside were retired. Washington Street was put in service early in 1957.

AUTOMATIC GATES AT McKEON ROAD - A.F.E. 5350

Installed two Griswold automatic gates with flashing light signals at McKeon Road. Gates were put in service on April 12, 1956.

AUTOMATIC GATES AT 45TH STREET, KENOSHA - A.F.E. 5338

Installed two Griswold automatic gates with sidewalk arms and flashing light signals and two automatic sidewalk gates at the newly opened 45th Street crossing. The crossing at 48th Street was closed and the track box operated autoflag retired. The new crossing and automatic protection were put in service on February 3, 1956.

COMMUNICATION AND SIGNALS DIVISION

ADDITIONS AND BETTERMENTS - cont'd.

AUTOMATIC GATES AT FOUR-MILE ROAD - A.F.E. 5385

Installed two Griswold automatic gates with flashing light signals. Gates were put in service on November 24, 1956. This installation was rushed to completion by working Signal and Electrical forces on Saturdays and Sundays.

MUNDELEIN SIGNALS - A.F.E. 5332

Two signals for entrance to Mundelein station tracks were put in operation on January 3, 1956. These signals govern operation on the northbound track from 1700 feet south of St. Mary's to the station crossovers. The first signal, No. 77, is a two-position automatic block signal with yellow and red indications. The Home signal is located just south of the Mundelein station crossovers. It has yellow and red indications and governs operation through the crossover switches. This signal is cleared by a post mounted push-button, located south of the Home signal, provided the crossover switches are properly lined. Separate indications permit northbound movements to the freight track or diverging through the crossover to the station tracks.

Dwarf Signal No. 84 is located between the main tracks west of the crossovers and governs movements from the freight track through the crossovers to the southbound main.

COMMUNICATION AND SIGNALS DIVISION

JOB ORDERS

AUTOMATIC GATE INTERCONNECTION, DUNDEE ROAD - J.O. 1158

On October 24, 1956, the automatic gates and flashers at Dundee Road, Northbrook, were interconnected with the flashing light signals on the C&NW Ry. crossing so that the outside device on either railroad operates with the crossing signals on the other railroad. Cost of this installation was borne by Cook County.

AUTOMATIC GATES AT HOUGH CROSSING, LIBERTYVILLE - J.O. 1153

Two Griswold automatic gates with flashing light signals were installed at the new Hough Company private crossing east of the substation at Liberty Lake. These gates operate for movements on the main line tracks only. The Frank G. Hough Co. assumed all costs of construction, operation and maintenance. Gates were put in operation on June 26, 1956.

COMMUNICATION AND SIGNALS DIVISION

SIGNAL AND INTERLOCKING

MAINTENANCE WORK

In addition to the routine work of maintaining interlocking plants, block signals and crossing protection devices the following work was done and charged to maintenance:

Changed out the northwest "M" gate at Oakton Street.

Changed out the southwest Model 31 gate at Main Street which had been damaged by an automobile.

Changed out northeast Model 31 gate at Dempster Street.

On October 23, 1956, the automatic gates and flashing light signals at Church Street were interconnected with the flashing light signals on the C&NW Ry. crossing so that the outside protective device on either railroad operates with the signals on the other railroad.

Replaced northeast Model 31 gate at Simpson Street which had been damaged by an automobile.

Replaced gates at Glenview Road four times as follows:

- May 17 - Changed out southwest "M" gate.
- June 15 - Changed out northeast "M" gate and flasher signal.
Wrecked by truck.
- July 11 - Changed out northeast "M" gate damaged beyond repair.
Replaced with Model 31 gate.
- July 18 - Changed out southwest "M" gate. Replaced with Model 31 gate.

Changed out northeast "M" gate at Deerfield Road.

Renewed derail and crank at south end of Great Lakes interchange tracks.

Renewed air pipes under northbound track at 22nd Street, North Chicago.

Northbound gate indicating signal for Grand Avenue, Waukegan, was removed on December 7, 1956, and the northbound control circuit extended south to the north side of Cornelia Avenue.

Replaced both Model "M" gates at 67th Street, Kenosha, with Model 31 gates.

COMMUNICATION AND SIGNALS DIVISION

SIGNAL AND INTERLOCKING

MAINTENANCE WORK - cont'd.

Changed out southwest "M" gate at 52nd Street, Kenosha.

Changed out southeast sidewalk gate at 16th Street,
Racine.

Changed out northwest sidewalk gate at Highwood Avenue.

Replaced both original automatic gates at North Gate, Fort Sheridan, with Model "M" gates. Also renewed 5 cells of DME 5A batteries.

Automatic gates at Highwood Avenue were removed October 4; at Washington Street on October 12; and at Lake Bluff, Shore Line, on October 17. STOP signs were installed and all trains required to stop before entering the crossing.

On August 16, 1956 the colors of all two-position color light crossing protection signals were changed -

GREEN to LUNAR WHITE
RED to PURPLE

SHORE LINE CHANGES

On April 24, 1956, single track operation went into effect on the Shore Line between Elm Place, Highland Park, and a point 800 feet south of North Chicago Junction. At that time automatic gates at Highwood Avenue, Washington Street, Farwell's, Deerpath, Westminster and Lake Bluff were taken out of service. At North Gate crossing the gates remained in service, operating for trains in either direction on the single track. The northbound cut-in was moved south to a point 400 feet south of Fort Sheridan station. Facing point switch protection signals for northbound switches at Vine Avenue, Washington Street and Downey's and the northbound gate indication signal at North Gate were taken out of service. Subsequently, control circuits at certain locations were revised to permit operation for trains in either direction. Farwell's was restored on May 8; Deerpath and Westminster on May 1; and Lake Bluff on May 11, 1956.

COMMUNICATION AND SIGNALS DIVISION

SIGNAL AND INTERLOCKING

FACILITIES MAINTAINED AS OF DEC. 31

	<u>1956</u>	<u>1955</u>
Automatic Gates	35	36
Automatic Gates and Flashers	43	38
Manual Gates	3	3
Flasher Signals	4	4
Autoflags - Track Circuit	13	13
" - Manual Control	-	3
Block Signals - S.T. Miles	106.8	106.2
Switch Protection Signals	3	6
Interlocking Plants	4	4
Smash Gates	2	2
Gate Indication Signals	8	9

TELEPHONE FACILITIES

As of December 31

Aerial Cable - Miles	11.70	12.14
Underground Cable - Miles	23.64	26.68
2-Wire Open Line	126.76	143.64
Cable Terminals - All Classes	121	121
XYZ Cable Terminal Protections	18	21
Cable Houses	37	37
Telephone Booths	64	64
" Boxes on Poles	7	7
" Stations	187	187
Interlocking Plant Telephones	16	16
Dispatch Boards - 20 Line	1	1

DISTRIBUTION AND POWER DIVISION

ADDITIONS AND BETTERMENTS

SIDETRACK CONSTRUCTION - SYSTEM

Installed trolley wire and rail bonding for Hill-Behan sidetrack - A.F.E. 5354, and American Can Co. sidetrack - A.F.E. 5357.

OIL BURNER, ZION STATION - A.F.E. 5365

Installed a secondhand transformer and appurtenances on the 2300 volt signal line to provide 60-cycle A.C. power for the operation of a new oil burner in the station.

AUTOMATIC GATE PROGRAM - SYSTEM

Installed necessary line wire and aerial cable, transformers, power drops and bonding required by the installation of automatic gates at various locations on the system.

LIGHTING OF PARKING LOTS - A.F.E. 5348

Installed four 6000 lumen, 175 watt mercury vapor lamps in open refractor luminaire, V-band glassware holders mounted on wood poles in the Northfield parking lot. These lights are controlled by a Sangamo Electric time clock. Equipment was purchased from Line Material Company and installed by company forces. Lights went into service on December 6, 1956.

INSTALLATION OF CURRENT TRANSFORMERS - A.F.E. 5371

Work was begun on the installation of current transformers and overload relays into the transmission line circuit ahead of the power transformers at Kenosha, Bose Road, and Racine substations to provide better protection to the lines and substations.

CONVERSION TO 60-CYCLE POWER IN WISCONSIN

The program for conversion of the Wisconsin substations to operate on 60-cycle power was continued on a reduced basis. Work done is described below.

DISTRIBUTION AND POWER DIVISION

ADDITIONS AND BETTERMENTS - cont'd.

FOUR-MILE ROAD - A.F.E. 5313

Conversion of this substation to a 60-cycle, 1000 KW automatic substation, which was started on September 6, 1955, was completed on March 9, 1956, when the substation was placed in operation.

RETIRE QUARRY SUBSTATION - A.F.E. 5376

Following the conversion of Four-Mile Road substation to 60-cycle operation the 25-cycle substation at Racine Quarry was taken out of service. The three power transformers were moved to Carrollville substation, the remainder of the equipment was scrapped and the building razed. The Load Dispatchers were moved from Quarry substation to Harrison Street substation on March 12, 1956.

DISTRIBUTION AND POWER DIVISION

POWER STATISTICS FOR YEAR 1956

POWER DISTRIBUTION

			1956	1955	% Inc. or Dec.
Wisconsin - exclusive of Milwaukee City	K.W.H.	A.C.	7,637,470	7,767,839.1	1.7
Milwaukee City	K.W.H.	A.C.	176	4,240.9	95.8
Wisconsin, including Milwaukee City	K.W.H.	A.C.	7,637,646	7,772,080	1.7
Milwaukee D.C. furnished by W.E.P. Co.	K.W.H.	D.C.	1,520,125	1,492,850	1.8
Wisconsin D.C. furnished by Win. Harbor	K.W.H.	D.C.	249,568	269,240	7.3
Wisconsin Total	K.W.H.	A.C.&D.C.	9,407,339	9,534,170	1.3
Illinois - Public Service Co. & C.T.A.	K.W.H.	D.C.	18,011,215	20,248,143	9.8
Total Purchased	K.W.H.	A.C.&D.C.	27,418,554	29,782,313	7.1
Total Used by Freight Locomotives	K.W.H.	A.C.&D.C.	1,793,511	1,827,680	1.9
Used by C.T.A. Skokie Shops	K.W.H.	A.C.&D.C.	1,018,159	1,118,868	9.0
Total Interurban Use			24,606,884	26,835,765	8.3
Milwaukee City	K.W.H.	D.C.	1,520,245	1,495,710	1.6
Average Monthly Demand for Year as Billed	K.W.		8,529	8,777.6	2.8
A.C.&D.C. K.W.H. Purchased on Demand					
Charge Basis			25,198,201	27,640,769	8.8
Load Factor for Year			33.7%	35.27%	4.5
Car Miles Operated on North Shore Power, including C.T.A. on Skokie Division			5,552,340	5,773,112.17	3.8
Car Miles Freight			911,817	910,065.37	0.2
Car Miles Other Interurban			4,640,523	4,863,046.8	4.6
Kilowatt Hours per Car Miles, Less Freight and Skokie Shops			5.30	5.52	4.0
Average Mean Temperature for Year			51.9	52.2	0.6
Normal Mean Temperature for Year			49.8	49.7	0.2

DISTRIBUTION AND POWER DIVISION
COST OF ELECTRICAL ENERGY PER CAR MILE

K.W.H. - C.N.S.&M. RY.

1956

	<u>Total K.W.H.*</u>	<u>Car Miles on N.S. Power</u>
January	2,730,378	489,539.06
February	2,533,489	460,331.92
March	2,560,870	480,316.21
April	2,363,278	462,100.80
May	2,233,132	485,646.33
June	1,965,163	455,001.58
July	1,980,381	448,596.26
August	2,032,592	461,959.55
September	1,968,531	437,971.87
October	2,112,067	458,782.24
November	2,370,951	450,048.85
December	<u>2,567,722</u>	<u>462,045.94</u>
Total	27,418,554	5,552,340.61

Purchased Power - Account 59 \$464,805.44

Operating Expense - Power Accounts \$556,551.47

Operating Expense \$ 91,746.03

Total Car Miles on North Shore Power 5,552,340.61

Unit Power Cost: 1.695¢ / KWH

Unit Power Consumption: 4.938 KWH / car mile

Unit Car Mile Power Cost: 8.371¢ / car mile

Unit Total Power Accounts Expense: 10.024¢ / car mile

*Includes Consumption at C.T.A. Skokie Shops

DISTRIBUTION AND POWER DIVISION

POWER STATISTICS FOR YEAR -- 1956

LOCOMOTIVE METERED K.W.H.

<u>Engine No.</u>	<u>K.W.H. Used</u>	<u>Mileage</u>	<u>K.W.H. per Mile</u>
452	124,020	9,994	12.41
453	146,290	13,970	10.47
454	157,633*	11,995	13.14
455	239,480	12,607	18.99
456	268,090	13,137	20.41
457	214,808**	13,390	16.04
458	86,472	11,643	7.43
459	<u>355,140</u>	<u>26,655</u>	<u>13.32</u>
	1,591,933	113,391	14.04 Avg.

Total metered at locomotive - 1,591,933 K.W.H.
Illinois Part 82.25% 1,309,365
Plus 10% Distribution Loss 130,936

D.C. K.W.H. Used in Illinois at point
of Delivery 1,440,301 K.W.H.
Wisconsin Part 17.75% 282,568
Plus 25% Transmission and
Conversion Loss 70,642

A.C. K.W.H. Used in Wisconsin at point
of Delivery 353,210 K.W.H.

Total Energy at Power Co. Metering
Points 1,793,511 K.W.H.

K.W.H. Illinois part - 1,440,301 @ 2.011¢ \$28,964.45
K.W.H. Wisconsin " - 353,210 @ 1.378¢ 4,867.23

Total Cost for Electric Energy \$33,831.68

Total Freight Car Miles Operated 911,816.79

A.C. and D.C. at point of delivery per
freight car mile 1.967 K.W.H.
Purchased power cost per freight car mile 3.71¢
Total Net Freight Ton Miles 22,873,319
Total K.W.H. per Net Freight Ton Mile 0.0784

*Meter registering in correctly, used figures of previous year
January through May, 1955.

**Same as above for April through October, 1955.

POWER PURCHASED - 1956

	<u>1956</u>			<u>1955</u>			Percent Inc. or Dec.		
	<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	82,530	-	-	84,449	-	-	2.3	-	-
Billing Demand	82,530	\$2.114	\$174,427.50	85,186	\$2.102	\$179,075.50	3.1	0.6	2.6
Energy - K.W.H.	17,560,555	1.017¢	178,654.45	19,868,689	1.007¢	200,124.32	11.6	1.0	10.7
Total and Average	-	2.011¢	\$353,081.95	-	1.909¢	\$379,199.82	-	5.3	6.9
<u>Public Service A.C. Contract**</u>									
Demand as Run	-	-	-	103	-	-	100.0	-	-
Billing Demand	-	-	-	103	\$1.500	154.50	100.0	100.0	100.0
Energy - K.W.H.	-	-	-	1,600	0.750¢	12.00	100.0	100.0	100.0
Total and Average	-	-	-	-	10.406¢	\$ 166.50	100.0	100.0	100.0
<u>Wisconsin Electric Power Company</u>									
Demand as Run	19,634.1	-	-	19,975	-	-	1.7	-	-
Billing Demand	*19,821.4	\$1.202	\$ 23,821.36	20,042.1	\$1.200	\$ 24,042.06	1.1	0.2	0.9
Energy - K.W.H.	7,637,646	1.066¢	81,389.72	7,770,480	1.020¢	79,224.58	1.7	4.5	2.7
Total and Average	-	1.378¢	\$105,211.08	-	1.329¢	\$103,266.64	-	3.7	1.9
W.E.P. Co. Metered D.C.	1,520,125	1.200¢	\$ 18,241.50	1,492,850	1.200¢	\$ 17,914.20	1.8	-	1.8
C.T.A. Calvary D.C. (A)	700,228	1.667¢	\$ 11,672.92	648,694	1.681¢	\$ 10,907.56	7.9	0.8	7.0
GRAND TOTAL -									
Demand - A.C. & D.C.	102,351.4	\$1.937	\$198,248.86	105,331.1	\$1.930	\$203,272.06	2.8	0.4	2.5
Energy - A.C. & D.C.	27,418,554	1.058¢	289,958.59	29,782,313	1.035¢	308,182.66	7.9	2.2	5.9
Cost		1.781¢	\$488,207.45		1.717¢	\$511,454.72		3.7	4.5

STATISTICS

	<u>Public Service D.C.</u>		<u>Public Service A.C.</u>		<u>Wisconsin Electric Power Co. A.C.</u>	
	<u>1956</u>	<u>1955</u>	<u>1956</u>	<u>1955</u>	<u>1956</u>	<u>1955</u>
Coal Cost per Ton - Mo. Avg.	-	-	-	-	\$7.42	\$6.94
Fuel Cost per Therm - Mo. Avg.	2.687¢	2.702¢	-	2.730¢	-	-
Adjustment per K.W.H.	Zero	Zero	-	0.15¢	0.37¢	0.32¢
Load Factor as Run	29.2%	32.4%	-	2.1%	53.3%	53.9%
High Monthly Demand	Month	K.W.	Month	K.W.	Month	K.W.
Low " "	Feb.	7,655	Jan.	8,492	Jan.	1,976.1
Avg. " "	Aug.	6,122	Aug.	5,412	June	1,318.2
	-	6,877.5	-	7,037.4	-	1,636.2
			-	**	-	1,064.6

*Minimum Demand

**Discontinued Public Service A.C. Supply 12:01 A.M. - January 15, 1955
(A) 700,228 K.W.H. Supplied by Calvary - 1,018,159 Used at Skokie Shops

DISTRIBUTION AND POWER DIVISION

POWER SUMMARY AS BILLED - YEAR 1956

1,739,080	No. C-430	Skokie	D.C.
1,092,626	No. C-431	Lake Avenue	D.C.
1,291,072	No. C-432	Kotz Road	D.C.
134,530	No. C-432	Signals	A.C.
1,349,932	No. C-433	Deerfield Road	D.C.
1,388,072	No. C-434	Old Mill Road	D.C.
158,790	No. C-434	Signals	A.C.
251,550	No. C-435	Laurel Avenue	D.C.
1,634,512	No. A-436	Libertyville	D.C.
165,272	No. C-406	Fort Sheridan	D.C.
1,946,660	No. A-224	North Chicago	D.C.
1,153,467	No. A-543	Waukegan-Pine Street	D.C.
150,442	No. A-444	Beach Road	D.C.
748,700	No. A-400	Winthrop Harbor	D.C.
3,200,270	No. C-280	Lake Bluff	D.C.
274,700		Highwood Shops	A.C.
694,180		Skokie Shops	A.C.
87,800		Howard Street	A.C.
73,700		Waukegan Signals	A.C.
25,200		Zion Signals	A.C.
17,560,555		Public Service Co. D.C. Contract Billings	
700,228		C.T.A. Calvary Billings	D.C.
18,260,783		Total Purchased - Illinois	D.C.
249,568		Less Winthrop Harbor to Wisconsin	D.C.
18,011,215		Total - Illinois	D.C.
7,637,646		Wisconsin Electric Power Company	A.C.
1,520,125		Wisconsin Electric Power Company	D.C.
249,568		Winthrop Harbor to Wisconsin	D.C.
27,418,554		Total A.C.&D.C. Purchased	
=====			
851,230		McKeon Substation	D.C.
531,370		Kenosha Substation	D.C.
675,900		Bose Road Substation	D.C.
489,280		Racine Substation	D.C.
90,000		Quarry Substation	D.C.
421,170		Four-Mile Road Substation	D.C.
491,500		Nechuta Substation	D.C.
486,600		Carrollville Substation	D.C.
482,300		College Avenue Substation	D.C.
657,000		Milwaukee Substation	D.C.
5,176,350		Total Converted in Wisconsin	D.C.
1,520,125		Wisconsin Electric Power Company	D.C.
249,568		Winthrop Harbor to Wisconsin	D.C.
6,946,043		Total - Wisconsin	D.C.
7,637,646		K.W.H. - Wisconsin	A.C.
176		Less Milwaukee City	A.C.
7,637,470		K.W.H. A.C. to Wisconsin, exclusive of Milwaukee City	

DISTRIBUTION AND POWER DIVISION

POWER STATISTICS FOR YEAR - 1956

ENERGY PURCHASED

	<u>Public Service Company</u>	<u>C.T.A.</u>	<u>Wisconsin Electric Power Co.</u>	
	<u>D.C.</u>	<u>D.C.</u>	<u>A.C.</u>	<u>D.C.</u>
January	1,708,031	66,506	768,716	187,125
February	1,593,131	80,507	699,226	160,625
March	1,644,631	64,894	694,720	156,625
April	1,515,881	59,629	648,768	139,000
May	1,456,057	62,586	602,864	111,625
June	1,308,201	55,575	512,762	88,625
July	1,263,851	52,249	582,906	81,375
August	1,313,801	49,962	582,954	85,875
September	1,254,851	39,579	582,476	91,625
October	1,350,941	63,263	596,238	101,625
November	1,494,851	55,985	673,740	146,375
December	<u>1,656,328</u>	<u>49,493</u>	<u>692,276</u>	<u>169,625</u>
	17,560,555	700,228	7,637,646	1,520,125

Grand Total - System K.W.H. - A.C.&D.C.
 Energy Purchased on Demand - A.C.&D.C. - K.W.H.
 Average System Demand for the Year - K.W.
 System Load Factor

27,418,554
 25,198,201
 8,529.3
 33.7%

DISTRIBUTION AND POWER DIVISION
POWER STATISTICS FOR YEAR - 1956
MILWAUKEE CITY POWER STATISTICS

Kilowatt Hours - D.C.

	<u>N.S. Feeder</u>	<u>W.E.P. Co.</u>	<u>Total</u>
January	70	187,125	187,195
February	50	160,625	160,675
March	-	156,625	156,625
April	-	139,000	139,000
May	-	111,625	111,625
June	-	88,625	88,625
July	-	81,375	81,375
August	-	85,875	85,875
September	-	91,625	91,625
October	-	101,625	101,625
November	-	146,375	146,375
December	-	169,625	169,625
Total	120	1,520,125	1,520,245

Kilowatt Hours - A.C.

January	105
February	71
March	-
April	-
May	-
June	-
July	-
August	-
September	-
October	-
November	-
December	-
	176

Total D.C. K.W.H. to Milwaukee City - 1,520,245
 Total A.C. K.W.H. to Milwaukee City - 176
 Wisconsin Ratio of Conversion - 68.3%

DISTRIBUTION AND POWER DIVISION

POWER STATISTICS FOR YEAR - 1956

ILLINOIS SUBSTATIONS D.C. OUTPUT IN K.W.H.

	<u>Calvary Sub.</u>	<u>Skokie No. C-430</u>	<u>Lake Ave. No. C-431</u>	<u>Kotz Road No. C-432</u>
January	66,506	165,635	108,565	109,556
February	80,507	140,905	96,405	100,956
March	64,894	159,135	111,095	106,256
April	59,629	147,345	99,125	94,656
May	62,586	137,695	96,291	99,956
June	55,575	119,625	83,425	101,656
July	52,249	117,485	80,335	102,956
August	49,962	139,695	79,165	115,456
September	39,579	129,875	81,475	124,056
October	63,263	144,055	74,545	106,256
November	55,985	157,545	67,955	119,356
December	49,493	180,085	114,245	109,956
	700,228	1,739,080	1,092,626	1,291,072

	<u>Deerfield Rd. No. C-433</u>	<u>Old Mill Rd. No. C-434</u>	<u>Laurel Ave. No. C-435</u>	<u>Liberty- ville No. A-436</u>
January	136,936	120,856	50,155	175,146
February	124,316	115,756	36,445	168,716
March	112,816	125,856	18,835	176,706
April	131,636	113,556	16,495	147,396
May	131,126	114,956	16,635	128,666
June	129,856	107,656	15,285	83,456
July	123,106	100,756	16,705	81,826
August	109,496	112,156	18,015	89,936
September	56,866	114,956	15,335	98,506
October	96,646	112,656	16,315	126,356
November	95,756	121,856	14,235	171,436
December	101,376	127,056	17,095	186,366
	1,349,932	1,388,072	251,550	1,634,512

DISTRIBUTION AND POWER DIVISION

POWER STATISTICS FOR YEAR - 1956

ILLINOIS SUBSTATIONS D.C. OUTPUT IN K.W.H. - cont'd.

	<u>Fort Sheridan</u> <u>No. C-406</u>	<u>North Chicago</u> <u>No. A-224</u>	<u>Waukegan</u> <u>No. A-543</u>
January	19,956	185,860	124,110
February	20,756	180,440	119,750
March	17,056	194,040	118,410
April	13,256	167,990	102,330
May	12,356	152,570	89,920
June	9,756	125,750	78,860
July	9,456	124,890	84,450
August	11,756	120,210	78,930
September	6,556	137,300	74,330
October	12,956	159,360	79,300
November	15,056	188,830	98,040
December	16,356	209,420	105,037
	165,272	1,946,660	1,153,467

	<u>Beach Road</u> <u>No. A-444</u>	<u>Winthrop Harbor</u> <u>No. A-400</u>	<u>Lake Bluff</u> <u>No. C-280</u>
January	15,586	60,500	300,720
February	14,476	63,300	281,880
March	14,646	58,400	299,290
April	12,186	69,000	282,070
May	11,066	72,500	271,110
June	9,256	82,100	258,240
July	10,446	54,900	258,740
August	10,306	59,000	264,490
September	10,576	50,900	235,090
October	12,846	54,500	243,430
November	15,396	52,200	242,230
December	15,656	71,400	262,980
	150,442	748,700	3,200,270

Illinois KWH D.C. - Less Auxiliary Load - 10,811,883

DISTRIBUTION AND POWER DIVISION

POWER STATISTICS FOR YEAR - 1956

AUXILIARY POWER FURNISHED UNDER
D.C. POWER CONTRACT IN K.W.H.

	<u>Kotz Road</u> <u>Signals</u> <u>No. C-432</u>	<u>Old Mill Road</u> <u>Signals</u> <u>No. C-434</u>	<u>Highwood</u> <u>Shops</u>	<u>Skokie</u> <u>Shops</u>
Jan.	11,330	16,010	27,420	64,600
Feb.	11,510	13,600	26,810	63,940
Mar.	11,770	14,240	26,540	63,280
Apr.	10,700	13,000	22,760	57,720
May	10,990	13,030	21,830	59,850
June	10,410	12,210	19,470	45,780
July	10,570	12,350	18,990	40,950
Aug.	10,650	12,350	19,960	46,200
Sept.	11,080	22,810	19,080	51,710
Oct.	11,530	2,320	23,120	59,250
Nov.	11,570	13,210	24,650	69,350
Dec.	<u>12,420</u>	<u>13,660</u>	<u>24,070</u>	<u>71,550</u>
	134,530	158,790	274,700	694,180

	<u>Howard Street Station</u>	<u>Zion</u> <u>Signals</u>	<u>Waukegan</u> <u>Signals</u>
Jan.	7,330	2,160	5,600
Feb.	7,310	2,160	5,700
Mar.	7,800	2,160	6,300
Apr.	7,240	1,920	5,500
May	7,450	2,160	5,900
June	7,270	2,040	6,100
July	6,920	1,920	6,100
Aug.	6,850	2,280	6,900
Sept.	6,990	1,860	5,500
Oct.	7,040	2,160	6,300
Nov.	7,060	2,220	6,900
Dec.	<u>8,540</u>	<u>2,160</u>	<u>6,900</u>
	87,800	25,200	73,700

Total Auxiliary A.C. under D.C. Contract - 1,448,900 K.W.H.

DISTRIBUTION AND POWER DIVISION

POWER STATISTICS FOR YEAR - 1956

WISCONSIN SUBSTATION D.C. OUTPUT IN K.W.H.

	<u>McKeon</u>	<u>Kenosha</u>	<u>Bose Rd.</u>	<u>Racine</u>	<u>Quarry</u>	<u>4-Mile Road</u>
Jan.	101,480	49,080	68,380	46,170	35,000	-
Feb.	84,790	42,950	74,290	46,070	35,000	-
Mar.	90,540	34,640	64,010	43,870	20,000	30,110
Apr.	60,810	51,590	62,930	46,000	-	37,510
May	58,120	55,520	38,300	46,320	-	41,780
June	13,500	69,900	38,350	41,400	-	40,000
July	53,710	55,630	22,800	44,880	-	47,000
Aug.	54,190	39,840	40,900	34,010	-	37,400
Sept.	60,960	39,630	46,850	33,090	-	36,590
Oct.	70,900	37,700	52,610	24,720	-	43,130
Nov.	123,030	-	101,690	38,630	-	49,300
Dec.	79,200	54,890	64,790	44,120	-	58,320
	851,230	531,370	675,900	489,280	90,000	421,170

	<u>Nechuta</u>	<u>Carrollville</u>	<u>College</u>	<u>Milwaukee</u>	<u>D.C. W.E.P.Co.</u>	<u>Win. Harbor to Wisc.</u>
Jan.	65,400	46,700	43,600	56,500	187,125	20,167
Feb.	71,600	42,800	43,700	53,000	160,625	21,100
Mar.	51,300	46,000	36,700	56,400	156,625	19,467
Apr.	38,200	40,500	38,100	47,300	139,000	23,000
May	44,100	43,400	41,600	66,000	111,625	24,167
June	44,300	32,900	37,700	49,200	88,625	27,367
July	28,900	34,700	35,900	56,200	81,375	18,300
Aug.	31,300	37,400	37,800	55,700	85,875	19,666
Sept.	35,400	36,800	39,000	53,800	91,625	16,967
Oct.	35,100	35,100	44,000	52,300	101,625	18,167
Nov.	25,800	39,600	43,200	50,800	146,375	17,400
Dec.	20,100	50,700	41,000	59,800	169,625	23,800
	491,500	486,600	482,300	657,000	1,520,125	249,568

Total converted in Wisconsin	-	5,176,350
W.E.P. Co. D.C. " "	-	1,520,125
Winthrop Harbor D.C. in "	-	249,568

DISTRIBUTION AND POWER DIVISION

POWER STATISTICS FOR YEAR - 1956

A.C. POWER FURNISHED IN WISCONSIN IN K.W.H.

	<u>Kenosha</u>	<u>Racine</u>	<u>Nechuta</u>	<u>Milwaukee</u>
January	333,120	76,800	76,800	281,996
February	299,520	72,000	92,400	235,306
March	302,400	115,200	66,000	211,120
April	266,880	134,400	54,000	193,488
May	218,880	139,200	56,400	188,384
June	169,920	120,000	57,600	165,242
July	225,600	139,200	40,800	177,306
August	227,520	120,000	45,600	189,834
September	227,520	120,000	50,400	184,556
October	240,000	115,200	43,200	197,838
November	292,800	134,400	36,000	210,540
December	<u>275,520</u>	<u>153,600</u>	<u>26,400</u>	<u>236,756</u>
	3,079,680	1,440,000	645,600	2,472,366

Total A.C. to Wisconsin	7,637,646 K.W.H.
Total converted in Wisconsin	5,176,350 K.W.H.
Efficiency - Wisconsin	67.8%

Total A.C. for Nechuta	645,600 KWH
Total D.C. converted - Nechuta	491,500 KWH
Efficiency - Nechuta	76.1%

DISTRIBUTION AND POWER DIVISION

POWER STATISTICS FOR YEAR - 1956

MONTHLY K.W. DEMAND - ILLINOIS STATIONS

	Power #C-430	Power #C-431	Power #C-432	Signals #C-432	Power #C-433	Power #C-434	Signals #C-434
Jan.	786.7	576.7	673.3	14.0	660.0	923.3	26.3
Feb.	793.3	636.7	803.3	18.7	660.0	870.0	20.3
Mar.	756.7	633.4	650.0	18.0	560.0	826.7	19.7
Apr.	786.7	596.7	683.4	17.0	600.0	933.4	18.0
May	780.0	548.0	690.0	16.0	620.0	946.7	16.3
June	620.0	476.7	696.7	15.0	113.4	906.7	15.7
July	666.7	533.3	443.4	15.7	620.0	850.0	14.3
Aug.	703.3	443.3	670.0	15.6	636.6	873.3	16.6
Sept.	733.3	540.0	786.6	16.6	296.6	966.6	20.6
Oct.	693.3	410.0	660.0	18.3	63.3	880.0	18.7
Nov.	873.3	416.6	813.3	20.0	603.3	1,026.6	19.3
Dec.	820.0	640.0	776.6	21.0	643.3	980.0	20.3
	9,013.3	6,451.4	8,346.6	205.9	7,076.5	10,983.3	226.1

	Power #C-435	Lbtyville #C-436	Power #C-406	Power #A-224	Power #A-543	Power #A-444	Power #A-400
Jan.	223.3	1,016.7	3.3	656.7	346.7	66.7	80.0
Feb.	253.3	1,006.7	13.3	703.3	386.7	56.7	126.7
Mar.	236.7	983.4	13.3	680.0	370.0	30.0	80.0
Apr.	193.3	920.0	-	683.4	333.4	33.3	66.7
May	196.7	863.0	3.3	623.3	306.7	66.7	110.0
June	180.0	820.0	3.3	633.4	290.0	36.7	296.7
July	223.4	716.7	6.7	566.7	323.3	6.7	123.4
Aug.	123.3	690.0	-	540.0	276.6	30.0	90.0
Sept.	180.0	773.3	-	586.6	290.0	70.0	80.0
Oct.	180.0	820.0	-	610.0	260.0	76.7	73.3
Nov.	126.6	1,023.3	26.6	736.6	366.6	33.3	90.0
Dec.	163.3	940.0	3.3	720.0	386.6	36.6	130.0
	2,279.9	10,573.1	73.1	7,740.0	3,936.6	543.4	1,346.8

DISTRIBUTION AND POWER DIVISION

POWER STATISTICS FOR YEAR - 1956

MONTHLY K.W. DEMAND - ILLINOIS STATIONS - cont'd.

	<u>Power #C-280</u>	<u>Highwood Shops</u>	<u>Skokie Shops</u>	<u>Howard St. Station</u>	<u>Zion Signals</u>	<u>Waukegan Signals</u>
Jan.	1,073.3	34.0	93.0	15.0	3.0	9.0
Feb.	1,163.3	30.7	86.0	14.0	3.0	9.0
Mar.	1,053.4	33.0	77.7	14.0	3.0	9.0
Apr.	1,053.4	30.0	57.3	15.0	2.0	9.0
May	996.7	26.3	50.3	13.0	3.0	9.0
June	1,010.0	23.0	29.7	13.0	3.0	10.0
July	1,063.4	24.0	33.3	13.0	2.0	9.0
Aug.	933.3	22.0	34.0	12.0	2.0	10.0
Sept.	913.3	27.0	38.0	13.0	3.0	10.0
Oct.	920.0	23.7	57.3	13.0	3.0	10.0
Nov.	1,063.3	33.0	74.3	14.0	3.0	10.0
Dec.	<u>1,116.6</u>	<u>57.3</u>	<u>78.0</u>	<u>14.0</u>	<u>3.0</u>	<u>13.0</u>
	12,360.0	364.0	708.9	163.0	33.0	117.0

DISTRIBUTION AND POWER DIVISION

POWER STATISTICS FOR YEAR - 1956

MONTHLY K.W. DEMAND AS RUN

	W.E.P. Co. A.C. Wis.	P.S. Co. D.C. Ill.	System Total
January	1,976.1	7,281	9,257.1
February	1,797.5	7,655	9,452.5
March	1,785.9	7,048	8,833.9
April	1,667.8	7,032	8,699.8
May	1,549.8	6,885	8,434.8
June	1,318.2	6,693	8,011.2
July	1,498.5	6,255	7,753.5
August	1,498.6	6,122	7,620.6
September	1,497.4	6,345	7,842.4
October	1,532.7	6,284	7,816.7
November	1,732.0	7,367	9,099.0
December	1,779.6	7,563	9,342.6
	19,634.1	82,530	102,164.1

MONTHLY K.W. DEMAND AS BILLED

	W.E.P. Co. A.C. Wis.	P.S. Co. D.C. Ill.	System Total
January	1,976.1	7,281	9,257.1
February	1,797.5	7,655	9,452.5
March	1,785.9	7,048	8,833.9
April	1,667.8	7,032	8,699.8
May	1,549.8	6,885	8,434.8
June	1,500.0	6,693	8,193.0
July	1,500.0	6,255	7,755.0
August	1,500.0	6,122	7,622.0
September	1,500.0	6,345	7,845.0
October	1,532.7	6,284	7,816.7
November	1,732.0	7,367	9,099.0
December	1,779.6	7,563	9,342.6
	19,821.4	82,530	102,351.4

<u>Average Monthly Demand</u>	<u>As Run</u>	<u>As Billed</u>
Public Service Co. - D.C.	6,877.5	6,877.5
Wis. Elecc. Power Co. - A.C.	1,636.2	1,651.8
	8,513.7	8,529.3

DISTRIBUTION AND POWER DIVISION

POWER STATISTICS FOR YEAR - 1956

<u>Substation</u>	<u>Installed Capacity K.W.</u>	<u>Cycle</u>	<u>Number of Units</u>
No. C-430 Skokie	2,000	60	1
No. C-431 Lake Ave.	1,500	60	1
No. C-432 Ketz Rd.	1,500	60	1
No. C-433 Deerfield Rd.	1,000	60	1
No. C-434 Old Mill Rd.	1,500	60	1
*No. C-435 Laurel Ave.	1,000	60	2
No. A-436 Libertyville	1,500	60	1
No. C-406 Fort Sheridan	1,500	60	1
No. A-224 North Chicago	1,500	60	1
*No. A-543 Pine Street	1,900	60	1
No. A-444 Beach	1,000	60	1
****No. A-400 Winthrop Harbor	1,200	60	1
*No. C-280 Lake Bluff	1,900	60	1
	<u>19,000</u>		<u>14</u>
McKeon Rd.	1,500	60	1
Kenosha	1,000	60	1
Bose Rd.	1,000	60	1
Racine	1,500	60	1
**Quarry	(1,000)	25	(1)
***4-Mile Rd.	1,000	60	1
*Nechuta	1,500	60	2
Carrollville	1,000	25	2
College Ave.	500	25	1
Harrison St.	2,000	25	2
	<u>11,000</u>		<u>12</u>

INSTALLED AND NOT IN SERVICE

	<u>Installed Capacity K.W.</u>	<u>Cycle</u>	<u>Number of Units</u>
No. 238 Winnetka	1,500	60	1
No. C-93 Ravinia	1,000	60	1
	<u>2,500</u>		

*Mercury arc rectifier substations: all others are rotary converter

**Ceased supplying power March 1956

***Converted to 60 cycle operation March 9, 1956

****Converter rated 1500 K.W. at 750 volts