NPS Form 10-900
(3-82)

OMB No. 1024-0018
Exp. 10-31-84

United States Department of the Interior
National Park Service

National Register of Historic Places Inventory—Nomination Form

See instructions in *How to Complete National Register Forms*
Type all entries—complete applicable sections

For NPS use only
received NOV 7 1984
date entered DEC 6 1984

1. Name

historic Oneida Street Station

and/or common East Wells Power Plant

2. Location

street & number 108 ~~East~~ Wells, 816 ~~North~~ Edison Sts. ___ not for publication

city, town Milwaukee N/A vicinity of

state Wisconsin code 55 county Milwaukee code 079

3. Classification

Category	Ownership	Status	Present Use	
___ district	___ public	___ occupied	___ agriculture	___ museum
_X_ building(s)	_X_ private	_X_ unoccupied	___ commercial	___ park
___ structure	___ both	___ work in progress	___ educational	___ private residence
___ site	**Public Acquisition**	**Accessible**	___ entertainment	___ religious
___ object	___ in process	___ yes: restricted	___ government	___ scientific
	___ being considered	_X_ yes: unrestricted	_X_ industrial	___ transportation
	N/A	___ no	___ military	___ other:

4. Owner of Property

name Milwaukee Repertory Theater

street & number 929 North Water Street

city, town Milwaukee N/A vicinity of state Wisconsin

5. Location of Legal Description

courthouse, registry of deeds, etc. Register of Deeds

street & number 929 N. Ninth Street Room 103

city, town Milwaukee state Wisconsin 53203

6. Representation in Existing Surveys

title Intensive Survey of the City of Milwaukee/ Wisc. Inventory of Historic Places has this property been determined eligible? ___ yes _X_ no

date 1978-9 ___ federal _X_ state ___ county ___ local

depository for survey records The State Historical Society of Wisconsin

city, town Madison state Wisconsin

7. Description

Condition		Check one	Check one
___ excellent	___ deteriorated	___ unaltered	X original site
X good	___ ruins	X altered	___ moved date _____
___ fair	___ unexposed		

Describe the present and original (if known) physical appearance

The Wells (Oneida) Street Station of the Wisconsin Electric Power Company is comprised of four primary masonry buildings, two of which are historically significant, and several attendant steel structures which are not significant.

The oldest of the primary buildings which is significant, the Machine Shop and Boiler Room #2, has served the plant in an auxillary capacity since 1900. It was built with cream city brick masonry-bearing walls for the Edison Illuminating Light Co. in 1890. Plans were drawn up by E.T. Mix. (See photos 2 & 3.) The four-story building, now painted, originally featured segmental arch windows with steel multi-paned windows, doors with round-arch stone lintels and a round-arch coping on a parapet wall crowning the facade. It was rebuilt in 1928 incorporating a contemporary design motif of the period for the facade parapet wall, thereby eliminating original cornice moldings. Other facade alterations in 1928 included the reconstruction of one door and two windows and the addition of another window. The north wall has been featureless except for the addition of an enclosed coal conveyor bridge to Boiler Room #3 in 1923 and attendant steel structures at a later time. The rear of the building facing the river was altered between 1961 and 1968 with the masonry infill of most of its windows. An original stack was replaced later (date unknown).

Distinctive features in the otherwise plain interior of the Machine Shop include an original wood and steel staircase between the second and fourth levels, and skylights lighting the fourth level.

Equipment which remains in the Machine Shop and Boiler Room #2 includes the plant's boilers which were shut down with the startup of the Oneida Street plant in the adjacent building in 1900 though they were later occasionally employed. Large belt-driven generators were later replaced in the 1920's and 1930's in both buildings with massive electromagnetic generators and much of the older facility was turned over to use for the expanded plant's mechanical and heating division and for storage.

The Oneida Street Station was designed by Milwaukee architect Herman J. Esser and built in 1900 on the plot of land bounded by the old Edison plant on the north, the Milwaukee River on the west, Oneida (Wells) Street on the south and River (Edison) Street on the east. (See photos 8, 9 & 2.) A steel superstructure was sheathed in brick masonry and its three visible facades dressed with pressed St. Louis orange brick with orange terra cotta trim. Although it is the same scale as the older Edison plant next door, the building functionally has only two main levels above ground. Two large rooms with differing ceiling heights occupy the ground floor. The 40-foot-high control and turbine room is in the eastern two-thirds of the ground-floor level. The level above it has a 14-foot ceiling height designed for use as a battery room and for cooling-water storage tanks. The western third of the building has a more equal division between ceiling and floor heights. The ground floor and basement were built for the boilers where the significant historical innovations and experimentation took place. The second level, now devoid of any machinery, was the location of the coal pulverizing and processing equipment and coalbunkers. (See plans.) An original square, brick flue stack was removed in the 1950's.

(See continuation sheet, page 1)

The differing height of interior spaces is reflected in the cohesive yet varying treatment of the exterior. A classical colonnade rising to the height of the generating and control room frames windows on the Wells and Edison street facades. Round-arch windows found on the ground-floor level of the three street-visible sides are of varying heights though they all have classical fanlight windows. The muntin and floor arrangement for each of the three styles varies according to height and use. Each river facade window has paired, double-hung nine-over-nine sashes topped by a fixed nine-pane sash. The East Wells facade has two proportionately distinct entities. Those of the boiler room facade feature paired, three-panel transom windows and double bi-folding doors. The height of the opening is almost a third of the building's height whereas the height of the control and turbine room window and door openings is about half the building's height. The larger windows are proportionately wider, and accomodate wider doors though they are the same height as those of the boiler room. The resulting larger space between the tops of doors and fanlights is filled with paired twelve-over-twelve double-hung sashes. Alterations to original windows and doors are minor except for the covering over of all but the fanlights of the Edison Street windows.

The second-floor windows are original on the eastern part of the building but above the boiler room two windows are found which date to the 1909 remodeling in which the ornate terra cotta pediment was removed. The second story of the river facade was completely rebuilt due to severe moisture damage about 1959 and the small windows and door were removed.

Original masonry which remains intact includes the entire colonnade of pilasters with terra cotta capitals, windows with keystones, and the second floor of the battery room except for the cornices and tops of window lintels. The terra cotta cornices marking the heights of the first- and second-level ceilings along with the ornate pediment above the boiler room were all removed and rebuilt with red brick in 1909. Another rebuilding of the parapet wall decades later removed yet more trim including the decorative banding of the window lintels. The terra cotta sign of the Milwaukee Electric Railway and Light Co. above the colonnade of Boiler Room #1's Wells Street facade is the only remnant of the ornate pediment. Decorative brick panels fill the areas above the boiler room doors and windows, dressing an otherwise blank wall. Decorative banding surrounds the second-floor windows of the battery room. Quoins mark the massive corners of the control and turbine room portion of the building and the second floor of the boiler room wing.

Other exterior features include a steel flue stack which rises above the building from the north end of the boiler room lacking the distinctive ornamental crown of the original and a steel-frame electric sign mounted on the roof near the Wells Street side which has remained in use since its installation in the 1920's.

The third building, housing the boiler room #3, was built along the river north of the old Edison building in 1923 and 1925. (See photo 6 & plan.) The two-and-one-half-story building was built with structural steel framing sheathed with brown brick. Limestone

(See continuation sheet, page 2)

coping, cornice details and door frames dress the exterior. A reinforced concrete chimney was built on the southeast corner of the plant at the same time as the boiler room.

The fourth primary building, housing the Boiler #4, was built in 1938 on the land between the Boiler Room #3 and Edison Street. (See photo 5 & plan.) Also of structural steel with a brown brick "skin", the five-story building is effectively one space housing the boiler room equipment. Exterior design elements were duplicates of those on the Boiler Room #3. Neither Boiler Room #3 nor #4 is significant.

Attendant structures to the four primary buildings are framed and sheathed in steel. (See photo 4.) They include an enclosed coal conveyor and transfer house wrapping around the Edison Building; an ashbin and conveyor, precipitators, loading dock, storage lean-to's, hoists, and enclosed walks and conveyors between the Edison building and Boiler Rooms #3 and #4. None date to the period of significance 1914-1919. (See plans.)

8. Significance

Period	Areas of Significance—Check and justify below				
___ prehistoric	___ archeology-prehistoric	___ community planning	___ landscape architecture	___ religion	
___ 1400–1499	___ archeology-historic	___ conservation	___ law	___ science	
___ 1500–1599	___ agriculture	___ economics	___ literature	___ sculpture	
___ 1600–1699	X architecture	___ education	___ military	___ social/	
___ 1700–1799	___ art	X engineering	___ music	humanitarian	
___ 1800–1899	___ commerce	___ exploration/settlement	___ philosophy	___ theater	
X 1900–	___ communications	___ industry	___ politics/government	___ transportation	
		___ invention		___ other (specify)	

Specific dates 1890,1900 (construction)[1] 1914-1919 (period of significance)[2] **Builder/Architect** Edward T. Mix, Herman V. Esser[3]

Statement of Significance (in one paragraph)

The East Wells Street Station of the Wisconsin Electric Power Company, which historically includes the old Edison Illuminating Light Co., is nationally significant as the site of historic advances in the development of the electric power industry in the early 20th century -- specifically, the development of the use of pulverized coal as an energy-efficient method of electricity generation in central power plants. The building also possesses significance due to its architectural relationship with the Pabst Theater and the Milwaukee City Hall. In addition, the old Edison building is locally significant in a minor role as the oldest remaining of the Wisconsin Electric Power Company's predecessor's plants remaining in Milwaukee. The 1923, 1925, and 1938 additions to the Wells Street Plant comprising Boiler Rooms #3 and #4 were typical of plant expansions of the period and are neither locally nor nationally historically significant.

ENGINEERING

Power plant production engineers made great strides in experimenting with the use of pulverized coal in the Wells street (then Oneida Street) plant of one of Wisconsin Electric Company's predecessors, The Milwaukee Electric Railway & Light Company (TMER&L). These experiments, which took place from 1914 through 1919, radically improved the efficiency of coal-generated electrical power and reduced its costs of production.

The experiments came about due to a culmination of a number of factors at work in those early years of central station electric power production: efficiencies were low, outages were frequent, and the quality of coal was becoming poorer while its cost was increasing. The Oneida Street Station was selected for experimentation among the plants owned then by TMER&L because it was already an older plant (having been built in 1900) in which the generating facilities were separate, relatively small units well-suited for experimentation.[4]

Historical Background

A brief review of the early development of the electrical generation industry and The Milwaukee Electric Railway & Light Company will provide a background to illustrate the significance of events.

In the late 19th and early 20th centuries, the electric utility situation in Milwaukee, as elsewhere throughout the nation, was tenous. Six different franchises were granted to electric companies, many of which served the same streets and buildings in downtown Milwaukee. Price wars, duplication of investments, and poor, unreliable service resulted. The first of the nation's electric utility holding companies, the North American Company,

(See continuation sheet, page 1)

9. Major Bibliographical References

1. McDonald, Forrest, Let There Be Light, The American History Research Center, Inc., Madison, WI American Book-Stratford Press, Inc., NY, 1957, p. 204.
2. Dornbrook, Fred L., "Development in Milwaukee of Pulverized Coal," a paper presented at the Semi-Annual Meeting of the American Society of Mechanical Engineers, June, 1948, Milwaukee, WI. Copy in the library of the Wisconsin Electric Power Company.

10. Geographical Data

Acreage of nominated property Less than one

Quadrangle name Milwaukee **Quadrangle scale** 1:24,000

UTM References

	Zone	Easting	Northing
A	16	425765	4765561
B			
C			
D			
E			
F			
G			
H			

Verbal boundary description and justification

Lots 5, 6, 7, 8 and 9, Block 47 Plat of City of Milwaukee

List all states and counties for properties overlapping state or county boundaries

state	N/A	code	county		code
state		code	county		code

11. Form Prepared By

name/title	Gary Tipler		
organization	The Alexander Company Preservation Services	date	August 17, 1984
street & number	403 W. Washington Avenue	telephone	(608) 257-2318
city or town	Madison	state	Wisconsin 53703

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

X national ___ state ___ local

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

State Historic Preservation Officer signature

title Director of Historic Preservation date October 23, 1984

For NPS use only

I hereby certify that this property is included in the National Register

Entered in the National Register date 12/6/84

Keeper of the National Register

Attest: date

Chief of Registration

GPO 894-765

based in New York, through a series of organizational and financial techniques, incorporated several pioneer electric and railway companies as The Milwaukee Electric Railway and Light Company in January, 1896. The move was seen as one which would streamline electrical production by bringing greater efficiency to the system, increasing its reliability and reducing the costs of production.[5]

Prior to the TMER&L incorporation, development was in progress to set the stage for the historic events to come later. One of the pioneer electric companies, the Edison Electric Illuminating Company, was established by a New York company in August 1889 and purchased by Northern in January 1890.[6] In the same year, the Edison Electric Illuminating built a plant, still part of the East Wells complex, which was transferred along with other holdings to TMER&L in 1896. Electrical generation was halted in the Edison plant upon completion of the Oneida Street plant built adjacent to it in 1900. The older building then became the headquarters of the mechanical and heating divisions of the Oneida Street plant.

The construction of the new Oneida Street Station took place relatively early in the history of the industry and incorporated then standard systems of production.

Its construction was indicative of the growing sales of electricity to commercial and residential users, a business which had only a few years earlier amounted to only a fraction of that of the railways, formerly the major purchasers of electricity.

Experiments & Developments at the Oneida Street Plant

By 1914 a progressive course of action was set by J.D. Mortimer, president of both North American and TMER&L, to develop an alternative to the troublesome prospects of increasingly poor and expensive coal. John Anderson, brought from St. Louis by Mortimer in 1912 to serve as TMER&L's chief engineer, requested and received authority from TMER&L management to experiment with the use of pulverized coal for electrical generation. Mortimer's plan was to explore the feasibility of using pulverized fuel in a new and larger facility proposed for construction by 1915 or 1916. Anderson organized a research team including a senior TMER&L engineer, Fred Dornbrook, who became a principal engineer of the new system.[7]

Earlier attempts by other engineers experimenting (elsewhere in the nation) with pulverized coal for power generation had proven unsatisfactory. Powdered fuel was used, however, for annealing, forging, and puddling open-hearth furnaces, in cement and lime kilns, and in the manufacture of refractories and substances which require drying or burning. Its use in firing locomotives had not been cost-effective due to technical problems and high costs of installing and operating a plant to prepare the coal.[8]

Experiments at the Oneida Street Station in the development of a satisfactory pulverized fuel system for stationary boilers were undertaken by Anderson and Dornbrook in two

(See continuation sheet, page 2)

separate areas concurrently: the coal preparation and pulverizing process, and the process of burning the coal and utilizing its heat. The team carefully analyzed the problems and engineered innovative solutions:

> In the coal preparation and pulverizinag process, uniform reduction in the moisture content of conventionally-sized "green" coal was necessary to prepare it for combustion. The team developed a procedure to crush, dry and grind the coal to a fine powder.
>
> The coal-drying process, originally done with hot gases, required a long drying time and resulted in frequent fires and occasional explosions. Anderson and Dornbrook substituted steam grids for gases.
>
> The team designed a pulverizing mill based on an adaptation of a conventional flour mill.
>
> "Tramp iron" -- bolts, nuts, and pick-points, for example -- usually present in coal was not detectable until well into the pulverization process where it could damage the pulverizing mill. The solution was to employ a magnetic separator.
>
> After the coal was dried and pulverized, it was transported to bunkers during which process cool air sometimes caused condensation on the warm coal, rendering it incombustible. Anderson and Dornbrook insulated the conveyors and bunkers with magnesium.

But it was maintained that the fundamental development took place in the furnace. Boiler #1 was availed to the team for experimentation with the understanding that it could be used during peak loads if needed. The first step was to remove the old stokers and grates of the original fuel-feeder system. The stoker system was a series of screws which fed crushed coal to the furnace -- a system which was fraught with problems and inefficiencies and was labor intensive.

In an initial experiment, the furnace volume was increased downward to include the former ashpit. Considerably higher flame temperatures resulted along with an objectionable black smoke and the formation of destructive slag on the fire-brick and boiler tubes. The solution was to further increase the furnace volume and reduce gas velocities to permit complete combustion inside the furnace. With the furnace width limited by steel columns supporting the water tube boiler, the first major change in power plant design was initiated with the suspension of the boiler from above, and the creation of the oversized furnace. Boiler #1 was enlarged to more than five times its original volume and the hearth eliminated. The boiler was rebuilt, in total, five times in 1918 before the satisfactory shape and volume was achieved.

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A new problem arose as a result of burning pulverized fuel -- vast quantities of slag collected at the bottom of the furnace, removal of which required plant shutdown, cooling off and laborious removal. To allow waste to be deposited as ash and prevent slagging, Dornbrook theorized, it would have to be cooled by water piped through the ashpit. This "water-screen" was proven successful but more importantly was discovered as being another means of obtaining steam at the bottom of the furnace -- a process which led to what became know as radiant superheating. Even greater heat-cycle efficiency could then be provided by running tubing between the furnace walls and an additional layer of firebricks outside the furnace sidewalls. The water-screen cooling system was later tied into the boiler circulation. This change in furnace design, more than any other, contributed to the permanent success of the modern pulverized fuel furnace.[9]

Anderson developed another major improvement at the Oneida Street plant when he designed a boiler to use steam at 1,200 psi (pounds per square inch) of pressure at a time when pressures of 300 to 400 psi were considered extremely high. This advance was not employed at the Oneida Street plant, however, but rather at the company's new Lakeside facility in 1921, the plant originally envisioned by J.D. Mortimer in 1914.

Other contributions to the advance of the power generation industry developed at the Oneida Street plant by Anderson and Dornbrook's experiments included the development of metals capable of withstanding the increased temperatures and pressures, innovations in equipment, and direct connections of steam turbines to generators as single units.[10]

In 1919, after Anderson's brief tour of duty in the Navy, the scientific testing of the system took place. The tests of November 11-15 were witnessed, recorded and published by Paul W. Thompson, a technical engineer for the Detroit Edison Company. Thereafter a flood of inquiries about the system came in from around the world.

The success of the trial installations in the five boilers at the Oneida Street Station justified the installation of pulverized coal firing under eight large boilers at TMER&L's new facility, the Lakeside Station in St. Francis, in 1921. The Lakeside plant was the first power plant built to use the pulverized fuel system exclusively. Results of the tests of both facilities were published. These thorough and comprehensive reports were widely published at a time when industry innovations were kept secret. As a result, they were significant in the rapid rise of the use of pulverized fuel in central stations throughout the United States and abroad.[11]

The development was timely and profitable to TMER&L due to the considerable rise in sales of electricity. During the period from 1913 through 1927, when industries and most homes were converted to electricity, electric sales in the U.S. doubled about every four years.[12]

Following the successful operations of pulverized fuel plants at the Lakeside plant, TMER&L (renamed the Wisconsin Electric Company in 1938) installed additional boiler rooms in two additions adjacent to the north side of the Oneida Street plant -- the first

(See continuation sheet, page 4)

in 1923 and the second in 1938. These additions employed no significant equipment and are therefore not historically significant.[13]

Through the years, the plant was continually upgraded according to the changing standards of plant efficiency. During this process, the original experimental coal pulverizing, conveying and feeding equipment of the system was removed and replaced with modern equipment. Only the old boiler #1 upon which the design experiments were conducted, along with the other four boilers in Boiler Room #1 modeled after it, remain of the original system, though they have been altered to some extent.

The importance of the successful development of pulverized fuel at the East Wells plant was ranked by historian Forrest McDonald along with the invention of Edison's lamp and multiple distribution system, Stanley's transformer, and Parson's steam turbine as one of four fundamental technological developments which made low-cost central station service possible.[14]

The historic significance of the East Wells Street Station was recognized by the State of Wisconsin in 1956 by the installation of an historic site marker, and by the American Society of Mechanical Engineers in 1980 which designated the plant its 40th National Historic Mechanical Engineering Landmark.

Comparison with Other Local Plants

A review of Milwaukee area power plants built during the early decades of central power plant development will illustrate the comparative local historical significance of the East Wells Power Plant complex among other local power plants.

Many power stations and plants were built in Milwaukee in the early years of electric power generation. The first of three which became the nucleus of the Milwaukee Electric Railway & Light Company (TMER&L) was the Badger Illuminating Company, first operating in 1886 and later replaced by the Commerce Street plant built by The Milwaukee Electric Railway & Light (TMER&L) in 1903. The second plant was the Edison Electric Illuminating Company, built in 1890, and incorporated into the Oneida Street plant in 1900. The third was the Milwaukee Electric Light Company located in the basement of the Thomas Brass and Iron Company in 1887 on the site of the present Gimbel's. These properties were acquired by TMER&L in 1896. Of these three, only the Edison, as part of the present Wells Street Plant complex, remains.

Numerous other light, heat, urban and inter-urban railway companies were also acquired at various times by The Milwaukee Light, Heat & Traction Company, organized in 1896 and operated in conjunction with TMER&L. Subsequent to January, 1986, and up to October, 1938, TMER&L also acquired the operating utility properties of other Milwaukee companies: the Commonwealth and the Wells power companies, the plants of which were housed within larger commercial structures -- all of which were closed upon purchase or phased out of production.

(See continuation sheet, page 5)

TMER&L grew continually through the years until its corporate reorganization in 1938. In 1919, TMER&L purchased all the operating properties of Milwaukee Light, Heat & Traction Company and subsequently acquired numerous plants outside Milwaukee which were combined into one integrated system.

In 1938, TMER&L merged with the Wisconsin Electric Power Company, assumed the name of that company and transferred its transportation properties and businesses to The Milwaukee Electric Railway & Transport Company, a new wholly-owned subsidiary. The Wisconsin Electric Power Company had been established by TMER&L in 1920 to finance and own the Lakeside plant then under construction, which in turn was leased to TMER&L.[15]

The Boiler Rooms #3 and #4 were built for steam generation during a time when the company had directed its resources primarily toward newer efficient methods of electrical production. The focus was on new plants, which were developed outside central Milwaukee, a result of space requirements and land costs. The newer electrical generating plants received far more attention than the expansion of the older steam generating East Wells plant in 1923, 1925, and 1938 and the Commerce Street plant in 1906, 1910 and 1941. The TMER&L plants in the limelight between 1920 and 1950 were Lakeside and Port Washington.[16]

The Lakeside Power Plant is significant as the first plant designed to burn pulverized coal exclusively and to employ radiant superheating. It was also among the first to use 1200 pound steam pressures and to introduce a reheat cycle. The plant was the product of the technological innovations developed at the Oneida Street plant between 1914 and 1919. It opened in early 1921 and was expanded until 1930 during which time it established and held world records for efficiency and economy. By 1930 it had been expanded to a generating capacity of 310,800 kilowatts -- compared to TMER&L's combined generating capacity of 424,625 kilowatts at that time.[17]

The Port Washington plant is significant for its having held a world record for efficiency for its first 13 years of production. It began operation in 1935 with the completion of an 80,000 kilowatt coal-fired steam generating unit. Second, third and fourth units were added in 1943 and in 1950.[18]

ARCHITECTURAL SIGNIFICANCE
Relationship with Neighboring Buildings

The classic Revival-styled building of the old TMER&L Oneida Street Station, designed by Herman J. Esser, is locally architecturally significant, secondary to its national engineering significance, due to its relationship with the neighboring Pabst Theater and the Milwaukee City Hall. The other buildings of the complex are not architecturally significant.

The harmony among the TMER&L Oneida Street Station, Pabst Theater and the Milwaukee

(See continuation sheet, page 6)

City Hall is due to similarities in color, materials and design features. (See photo 8.) The eclectic City Hall of the "New Renaissance" style referred to by architectural historian Russell Zimmerman was built in 1893-1896 by architect H.C. Koch and Co. with St. Louis orange pressed brick and orange terra cotta trim. It may well have set the tone for the Renaissance Revival-style Pabst Theater designed by Otto Strack and built in 1893-1895 with similarly-colored brick and terra cotta. The Oneida Street plant was designed and built in 1899-1900 in a Classical Revival style. Architect Herman J. Esser employed round-arch windows with keystones, orange pressed brick and terra cotta cornices similar to those of the Pabst. (The cornices of the plant were removed in 1909.)[19]. As an original and important historical feature of the building, the terra cotta sign of the Milwaukee Electric Railway and Light Co. above the colonnade of Boiler Room #1 is considered a significant architectural feature.

Comparison with Other Power Plants

A comparison of the East Wells plant with other power plants built by The Milwaukee Electric Railway & Light Company during the early decades of the industry's growth will help to demonstrate the relative architectural significance of its buildings.

The Wells Street plant is comprised of buildings spanning a period from 1890 to 1938. The 1890 building built for the Edison Illuminating Light Company and later modified is largely undistinguished stylistically except for the symmetrical fenestration and the Romanesque stone arches of the first-floor doors on the Edison Street facade. The 1923, 1925 and the 1938 buildings reflect a severely simplified and stylized formalism of classical derivation. Tall battered pilasters, horizontal courses of limestone and small stone ornaments set into simply patterned brickwork are characteristic of these buildings and are often associated with industrial buildings built in the 1910's and 1920's. The 1938 building housing Boiler Room #4 departed from the older buildings' style in scale, massing, window proportions and some detailing. The continuity was carried by the use of the pilasters, the parapet roof, similarly colored brick and limestone belt courses.

The Commerce Street plant's massive main building (1903) with its cohesively designed 1906 and 1910 additions coupled with its high visibility is significant as a visual landmark. The Commerce Street plant's 1903 design recalls characteristics of both Romanesque and Classical Revival styles. The 1941 addition departed from the original in style, massing and fenestration but matched the color of brick.

The Lakeside plant is significant as the most cohesively-designed complex of the three plants, and a good example of the classically-derived style referred to previously. It was planned as an expandable plant with a projected optimal size. The principal building facades of the Lakeside plant and the attached entrance pavillion feature stylized stone cornices, architraves, medallions and ornaments dressing the entablatures and the capitals of the pilasters. The limestone detailing provides a dichromatic highlighting on the chocolate-brown brick buildings. The approach to the entrance pavillion is flanked by

(See continuation sheet, page7)

solid, panelled concrete rails on a bridge lit by globes set in period cast-metal fixtures on concrete posts.

The somewhat simpler design of secondary facades of the Lakeside plant was also employed in the 1923 and 1925 additions to the East Wells plant.

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[1]Building permits, General Office, Building Inspection, 1010 Municipal Building, Milwaukee.

[2]McDonald, Forrest, Let There Be Light, The American History Research Center, Inc., Madison, WI, American Book-Stratford Press, Inc., NY, 1957, p. 204.

[3]Building permits, General Office, Building Inspection, 1010 Municipal Building, Milwaukee.

[4]Op. cit., McDonald, p. 204.

[5]"75 Years of Service," The Outlet, Wisconsin Electric Power Company, Milwaukee, WI, January-February, 1971, p. 2.

[6]Ibid., p. 5.

[7]Ibid., p. 3.

[8]"Pulverized Coal," Combustion Engineering, Combustion Engineering Company, NY, 1948, pp. 9-33.

[9]Ibid., pp. 9-35.

Dornbrook, Fred L., "Development in Milwaukee of Pulverized Coal," a paper presented at the Semi-Annual Meeting of the American Society of Mechanical Engineers, June, 1948, Milwaukee, WI. Located in the library of the Wisconsin Electric Power Company.

[10]Op. cit.. Combustion Engineering, p. 9-33.

[11]Op. cit., Dornbrook, p. 2.

Kreisinger, H. and Blizard, J., "Milwaukee's Contribution to Pulverized Coal Development," American Society of Mechanical Engineers, June, 1940, Milwaukee, WI, p. 1.

(See continuation sheet, page 8)

"Excellent Results with Pulverized Coal in Milwaukee," POWER, October 15, 1918, p. 556.

Herington, C.F., Powdered Coal as Fuel, C. Van Nostrand Co., NY, 1920 2nd Edition, p. 269.

Anderson, John, "Pulverized Coal Under Central Station Boilers," POWER, March 2, 1920, p. 26.

Thompson, Paul W., "Pulverized Fuel at Oneida Street Plant," POWER, March 2, 1920, p. 339.

"Four-Day Test on Five Oneida Street Boilers Burning Pulverized Coal," Editor, POWER, March 2, 1920, p. 354.

[12] Op. cit., "75 Years of Service," p. 3.

[13] Building permits, General Office, Building Inspection, 1010 Municipal Building, Milwaukee.

[14] Op. cit., McDonald, p. 211.

[15] "75 Years of Service," The Outlet, Wisconsin Electric Power Company, Milwaukee, January-February, 1971, pp. 4-7.

[16] Annual Report to the Stockholders, The Milwaukee Electric Railway & Light Company, 1923-1928, 1937, 1938.

Building Permits, General Office, Building Inspection, 1010 Municipal Building, Milwaukee.

Plans for Boiler Room No. 3, City Records Center, Municipal Building, Milwaukee.

Construction Plans, City Records Center, B-1 Municipal Building, Milwaukee.

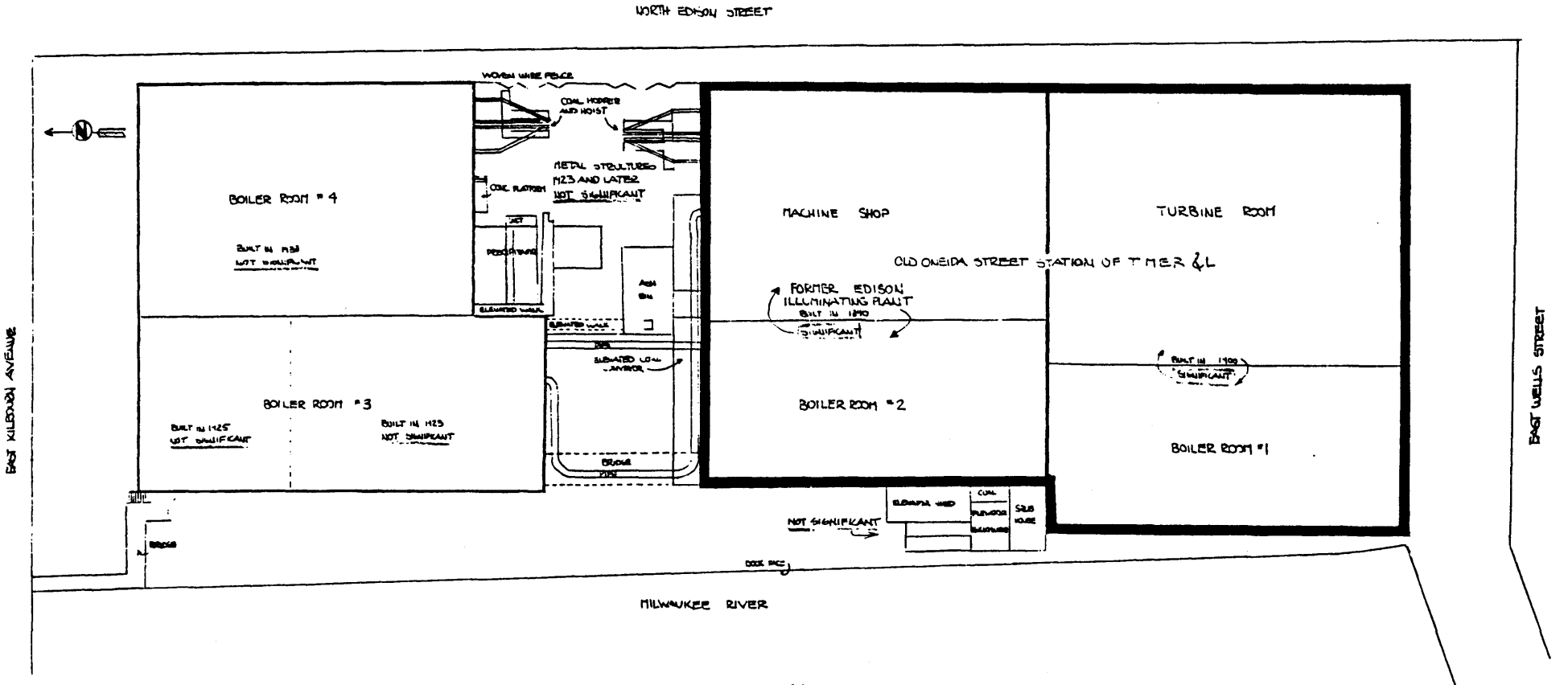
[17] "Lakeside Power Plant" and "Port Washington Power Plant" from Mechanical Engineering, A Century of Progress, Milwaukee Section of the American Society of Mechanical Enginners, Tom Fehring, editor, 1980.

[18] Lakeside Power Plant (brochure), Milwaukee Electric Railway & Light Company, 1930's.

[19] Building Permits, General Office, Building Inspection, 1010 Municipal Building, Milwaukee.

EAST WELLS POWER PLANT
108 E. Wells Street, 816 N. Edison Street
Milwaukee, Milwaukee County, Wisconsin

Site plan, drawn by Preservation Services,
J.A., May, 1984.



SITE PLAN
EAST WELLS STREET POWER PLANT
NO SCALE