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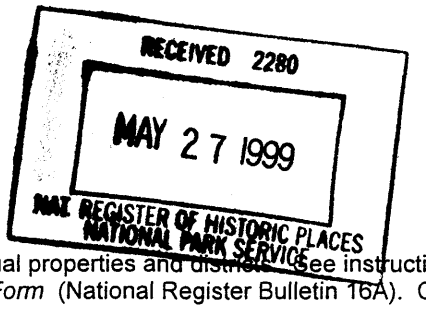
NPS Form 10-900OMB No. 10024-0018

(January 1992)

United States Department of Interior
National Park Service



National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900A). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Commerce Street Power Plant

other names/site number N/A

2. Location

street & number 1338 North Commerce Street N/A not for publication

city or town Milwaukee N/A vicinity

state Wisconsin code WI county Milwaukee code 079 zip code 53202

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this _x__ nomination ____ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property __X__ meets ____ does not meet the National Register criteria. I recommend that this property be considered significant ___nationally ____statewide __X__locally. (____See continuation sheet for additional comments.)

Alicia L. Goux 5/4/99

Signature of certifying official/Title Date

State or Federal agency and bureau

Commerce Street Power Plant | **Milwaukee / Wisconsin**
Name of Property | County and State

In my opinion, the property ___meets ___does not meet the National Register criteria.
(___See continuation sheet for additional comments.)

Signature of certifying official/Title | Date

State or Federal agency and bureau

4. National Park Service Certification

I hereby certify that the property is:
_✓_entered in the National Register.
___See continuation sheet.
___determined eligible for the National Register.
___See continuation sheet.
___determined not eligible for the National Register.
___See continuation sheet.
___removed from the National Register.
___other, (explain:)

Signature of the Keeper | Date of Action

Edson H. Beall 6/25/99

Commerce Street Power Plant Name of Property

Milwaukee / Wisconsin County and State

5. Classification

Ownership of Property
(check as many boxes as apply)

X private
__public-local
__public-state
__public-federal

Category of Property
(Check only one box)

_X_ building(s)
___district
___site
__structure
___object

Number of Resources within Property
(Do not include listed resources within the count)

Contributing	Noncontributing	
3	0	buildings
	0	sites
	0	structures
	0	objects
3	0	Total

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing.)

n/a

Number of contributing resources previously listed in the National Register

0

6. Function or Use

Historic Functions
(Enter categories from instructions)

INDUSTRY/PROCESSING/EXTRACTION:
energy facility

Current Functions
(Enter categories from instructions)

Vacant/Not in Use

7. Description

Architectural Classification
(Enter categories from instructions)

Late Victorian
Art Deco

Materials
(Enter categories from instructions)

foundation STONE
walls BRICK
roof ASPHALT
other WOOD
STEEL

Narrative Description
(Describe the historic and current condition of the property on one or more continuation sheets.)

Introduction:

The Commerce Street Power Plant is a collection of three resources, all of which are historically significant and possess acceptable levels of integrity to be considered eligible for the National Register of Historic Places under National Register Criterion A. The resources consist of a main power plant, constructed in three planned phases between 1903 and 1912; a seven-story boiler house constructed in 1941; and a switch house, the initial portion of which was constructed in 1911 and which received a significant second-story addition in 1941. All three buildings have undergone some alterations; the changes that have taken place, however, are of a minor scope for a historic industrial complex and, in the case of the 1941 alterations and construction, represent features of the property that are of historic significance in their own right. Both the 1903 power plant and the 1941 boiler house manifest historic fenestration and sash, as well as structural and architectural features; the more utilitarian switch house is highly intact to the period of its historic alteration. Due to the relatively high levels of integrity described below, the Commerce Street Power Plant complex may be considered eligible for the National Register of Historic Places under Criterion A, as discussed in Section 8.

Physical Context:

The three resources comprising the Commerce Street Power Plant stand on an irregularly-shaped lot bordered to the east[1] by the Milwaukee River and to the west by Martin Luther King, Jr. Avenue, formerly known at this location as Third Street. The property lies immediately north of Milwaukee's historic Third Street downtown commercial area, and stands at the southern end of a district historically dominated by milling, brewing and warehouse properties. Martin Luther King, Jr. Avenue is dominated to the west and north of the Commerce Street Power Plant by warehouse and industrial concerns interspersed with small commercial properties. The Commerce Street Power Plant property is immediately bounded to the south and north by vacant and non-historic parcels which are not historically associated with the Commerce Street Power Plant; the parcel immediately south of the property supports the Highway 145 freeway spur, an elevated highway that extends across the river. Commerce Street terminates at Martin Luther King Avenue immediately west of the Commerce Street Power Plant parcel.

1903-1912 Power Plant; General Features

The southernmost portion of the plant was commenced in 1903; it doubled in size with an 80-foot addition to the north of the original building in 1905, and received another similar addition in 1911.[2] These planned expansions were identical in all features to the original addition and were designed to accommodate increases in the numbers of boilers, turbines and other equipment without altering the plant's processes of production. As a result, the additions are virtually indistinguishable from the exterior or interior; interior and exterior wall surfaces, fenestration and other longitudinal features are unbroken. As completed, the building measures approximately 240 feet along its east- and west-facing facades, the

[1] The lot borders and building facades are not oriented to the cardinal points; references to cardinal directions in this application refer to the most applicable cardinal direction.

[2] Construction permits dated Sept. 1903, August 1904; September 1910. Located at Department of Building Inspection, City of Milwaukee.

north-and south-facing facades measuring approximately 145 feet in width. The building stands four stories in height above a partially exposed basement level, and consists of a red brick veneer with stone accents over a steel beam skeleton on a basement foundation of rough-faced cut limestone blocks. The site slopes slightly toward the river; the basement level is thus primarily below grade at the west-facing facade and above grade at the east-facing facade. All of the building's facades have a two-part form, the first floor being divided from the upper floors by a molded watercourse of brick with smooth tooled stone coping. All of the windows in the building are intact and original; those at the first floor and basement on the west, north and south sides of the building have been covered by plywood in order to preserve the historic features against vandalism. The original corbeled cornice of the building was reconstructed in 1942,[3] following completion of the new boiler house and the replacement of several smoke stacks on this building.

The power plant is oriented along a roughly northwest-southeast axis; the building is divided longitudinally by interior walls and by form, fenestration and other details into three primary sections, all of which span all three phases of the building's construction. Approximately the easternmost 65 feet of the building historically housed boilers; this portion is demarcated at the south- and north-facing facade by a stepped parapet and an upper story pattern of relatively small windows. The westernmost fifteen feet of the building consists of a set of narrow electrical and support galleries at each story; these galleries are also indicated on the south-facing facade by a single vertical row of relatively small windows. The center portion, comprising approximately 60 feet of the building's width, historically functioned as the turbine room and is evidenced on the south-facing facade by a set of three arched, multi-light windows three stories in height. These features are given in order to identify the building's functional parts; the building's exterior details are described by facade below:

1903-1912 Power Plant; South-Facing facade:
The south-facing facade may be visually divided into two blocks: the boiler room and turbine room portions, the electrical galleries appearing from the exterior as visually a part of the turbine room. After the west-and east-facing facades, which are readily visible to passerby, the south-facing facade is highly visible as well, although slightly obscured from the public right-of-way by the Switch House, described below. This facade maintains a relatively high level of integrity; of the few alterations evident, most date from the property's period of historic significance.

The boiler room portion of the facade consists of four bays, the center bay being considerably wider than the other three. This portion of the facade is surmounted by a stepped cornice, which obscures the slightly gabled form of the roof over this block. Extending from the fourth floor level into this parapet is a large door opening, formerly used to load coal into the hoppers; this was closed with brick during the 1942 retooling. The lower portion of this loading door is flanked to the east by a single, standard-sized window, and to the west by two such windows. This fenestration pattern is repeated at the second and third floor levels; all windows are set in plain, slightly arched surrounds surmounted by an extruded keystone of soldiered brick, and rest upon plain stone sills. All windows have multi-light double-hung wood sash,

[3] Architectural Drawings, Collection of Information Resources, Wisconsin Electric Power Company.

which are original to the building. A set of three windows, slightly smaller but having the same general characteristics as the windows previously described, are set at the second floor level directly beneath the fourth-floor loading bay; the discoloration between the loading door above and these three windows resulted from this area's protection from weathering and soot by the coal-loading apparatus used prior to 1942. The first floor of the boiler block is separated from the preceding features by the water course described initially as a general feature of the building; the first floor features consist of a centrally-located loading door flanked by windows aligned vertically with those above. These windows are of the same general dimensions as those above; like the first floor windows found on the balance of the building, these rest on deep sloped brick sills. These windows have original glazing behind the protective plywood panels. The watercourse has a slight arched shape over the loading doorway, which contains wide wood panel double doors with multiple lights. A temporary disposal chute traverses the facade near the westernmost bay described above.

The turbine block of the building has a flat parapet that partially obscures the clerestory, described from the interior below. This portion of the facade is dominated by three massive, multi-light, three story, round-arched windows. The center window is slightly taller and wider than the flanking windows; each window consists of nine sections divided by heavy wood mullions, the individual lights being divided by more narrow mullions. These features are entirely intact, with two individual panes having been broken. These windows are flanked at the west edge of the facade by three single-story, double-hung, wood frame windows identical to those described on the boiler portion of the facade. All, again, are intact. Beneath the water course, this portion of the facade is dominated by an overhead loading door, centered under the largest window above, which is flanked by two protected windows of the same general features as those first-floor windows described previously. The westernmost bay of the first floor consists of a pedestrian door in an elaborate surround, with an arched brick pediment topped with a molded stone coping resting on two brick pilasters with molded stone capitals.

1903-1912 Power Plant; West-Facing facade:
The property's west-facing facade adjoins the building's interior electrical galleries, as indicated previously. The facade has six pairs of bays; a vertical discoloration between several pairs of bays is the result of water discharge from downspouts located at the roof above these areas. The first story of this facade is demarcated by the watercourse; all of the first floor bays are aligned directly with those above and are of the same general description as the first floor windows described previously on the south-facing facade. Three small square windows are located in the foundation level directly under each bay. The first-floor windows of the third from northernmost set of bays were bricked closed upon the installation of a supplemental turbine in 1913;[4] one of these areas was recently cleaned as a test patch. The northernmost first-floor bay is a loading door with multiple light transom.

The three upper stories' windows at each bay are set within a three-story, round-arched surround similar to but narrower than the surrounds of the three large windows described on the south-facing facade.

[4] John Gurda, Path of a Pioneer: A Centennial History of Wisconsin Electric Power Company (Milwaukee: Wisconsin Electric Power Company, 1996), p. 97.

Each bay has a pair of double-hung, six-light-over-six-light windows set in a slightly arched surround at both the second and third stories, while the fourth story portion of each bay consists of a semicircular glazed area with a double-hung six-over-six window at the center and multiple fixed lights at either side. The areas between the sets of windows within each arch are defined by brick spandrels. All of these windows are of wood frame; all features are entirely intact.

1903-1912 Power Plant; East-Facing facade:
This highly intact facade adjoins the river, and is thus highly visible from several locations in the commercial center of Milwaukee. The basement level at this facade is fully exposed, and is separated from the river by a narrow landing. This facade also consists of twelve main bays, which are identical in all respects to the three-story arched bays described on the west-facing facade. These are almost entirely intact. The spaces between the southernmost four sets of bays are marked as stairways by narrow, double-hung, four-over-four, wood-frame windows at the second and third story levels; there is also one such window at the third floor between the northernmost pairs of bays. The first floor windows are uncovered on this facade, and have suffered relatively little vandalism. The first-floor window at each primary bay has the same dimensions and slightly arched shape described on the east-and south-facing facades; each bay's glazing consists of three six-light fixed windows separated from each other and from the four-light transom sections above by heavy wood mullions. At the first floor level beneath each of the sets of upper-story staircase windows is a single window of the same width as those above and the same height as the wider first-floor windows; these have nine-light fixed windows and six-light transoms. The basement level fenestration consists of double-hung, nine-over-nine windows arranged in pairs under each primary bay above and arranged singly under all but the northernmost of the sets of staircase windows described above. Two of these windows were bricked closed at an early but undetermined date. With the exception of these windows and one window in the second-southernmost bay, which has been replaced by a steel utility door leading to the attached fire escape, this highly visible facade is entirely intact.

1903-1912 Power Plant; North-Facing facade:
This facade is partially obscured from the public right-of-way by the 1941 boiler house, described below; it is thus the least visible portion of the power plant building. The facade as originally constructed was identical to the south-facing facade, and many of the features, including most of the single-story fenestration on both blocks and the turbine room's three-story arched windows, are intact. The center portion of the first floor of this facade adjoins the machine shop hyphen between the power plant and the 1941 boiler house building, and the coal loading door in the parapet of the boiler house portion of the facade was bricked closed at the same time as the alteration to the south-facing facade. Although this facade may be considered the most altered of the building's exterior surfaces, the alterations date from within the complex's period of significance and may thus be considered as contributing aspects of the property's historic significance.

1903-1912 Power Plant; Interior;
As previously described, the interior of the power plant consists of two primary spaces, the boiler room and the turbine room, and a third auxiliary space comprised of single-story electrical galleries. The building is divided longitudinally by a party wall that extends the length of the building and separates the

boiler room on the east from the turbine room on the west. The turbine room in turn is adjoined on the west by four above-grade electrical galleries, which housed controls and monitoring equipment for the turbines. All rooms span the length of the building. The electrical galleries are one-story spaces, while the turbine room is a full five stories in height, being open to the basement level. The boiler room, which has large overhead features as described below, appears visually from the interior to be two stories in height due to the location of the coal hoppers described below, although the room is structurally open to the gable. All original spaces and interior structural character-defining features are intact; all power-producing equipment was removed following the building's decommissioning in 1988.

The roof of the boiler room consists of a low gable supported by steel trusses, which is surmounted by a ventilating monitor. A series of coal hoppers are suspended from the trusses and extend the length of the room in single file at the gable; these are two stories in depth from the gable and fed coal to the boilers, which were located to either side below. Directly beneath and to either side of the coal hoppers are two sets of horizontal girders that traverse the length of the room at approximately the second floor level and are supported on vertical steel girders. These girders framed the boilers, which were located to either side of a central passageway. Although the boiler room space is wider than the turbine room space, described below, the room is generally darker, lacking the large north and south windows found in the turbine area. The room has brick walls and a concrete floor, and is intact to the historic era.

The turbine room is a visually impressive space, dominated at both the north and south ends by the massive three-story arched windows described previously on the exterior north- and south-facing facades. Additional light is provided by a fully glazed clerestory, approximately twenty feet in width, constructed of light steel girders; this clerestory extends the length of the room at the peak of the room's very slight gable. This roof is supported by a series of steel trusses spanning the width of the room; the turbine room has no interior posts. The east, north and south walls consist of exposed and painted brick; the west wall's steel posts and beams, which frame the single-story electrical gallery spaces, are partially infilled with concrete panels. A network of steel catwalks and staircases is suspended across the room at the first floor level; the basement level is dominated by massive concrete turbine supports. A steel observation deck also spans the southern portion of the room at the second floor level.

The four electrical galleries are all similar and had similar functions. Each extends the full length of the building, is accessed by staircases and fire doors at either end, and is illuminated by portions of the arched windows described previously on the exterior of the west-facing facade. Each is framed overhead and to either side by steel girders; all walls are of poured concrete with the exception of the west wall, which is of exposed brick.

1903-1912 Power Plant; Summary;
The oldest resource associated with the site demonstrates substantial integrity, particularly in light of the building's type and its length of operation. Unlike most industrial buildings of this vintage, most of the power plant's character-defining features, including virtually all of its fenestration, are intact. The few substantial alterations that have taken place, including the refacing of the cornice and the closing of the boiler room's third floor coal-loading doors, do not substantially impact the building's ability to represent its period of historic significance. The interior of the building, while clearly a utilitarian space, excellently

represents its historic function and retains many of its character-defining features, including the clerestory, trusses and large arched windows in the turbine room. The power plant building overall may be said to have excellent integrity as a historically significant industrial resource.

1941 Boiler House; General Features:
The Boiler House, added to the site on the eve of World War II, is a highly intact and historically significant portion of the property. The building is constructed of brick over a steel frame, and has smooth tooled concrete trim. The building consists of three primary parts: the seven-story main block, which housed the boiler; an eighth-story penthouse at the top of the building; and a three-story machine shop and office adjoining the older building to the south. The Boiler House's primary facades are designed in a modest Art Deco style, with fenestration and other details varying across facades according to the varying need for human access to the boiler. The Boiler House's main block has no windows at the first floor level, which instead consists of a banded brick pattern divided from the upper stories by a concrete water course.

1941 Boiler House; West-facing facade:
The most visible facade of the boiler house, the west-facing facade, is the most elaborately designed of the building's facades and is highly intact. The facade, which does not have a regular fenestration pattern, is dominated by a slightly stepped-out, blank brick wall area at roughly the center of the facade; the boiler behind this wall at this location required no windows. This stepped-out, blank, brick wall is demarcated one story below the main block's terminus by two evenly-spaced, smooth concrete blocks, a wide concrete band and a concrete coping. Rising across the top story area from this feature are three vertical rows of brick chevrons. The chevrons are intersected by a smooth concrete band, which crosses the west-facing and the western half of the south-facing facade at this level. The stepped-out, blank, brick wall previously mentioned is flanked at the second story by two full-story, multi-pane, fixed windows with plain sills, which are in turn flanked at either side of the facade by two identical windows. These latter windows, however, are set into slight recesses in the wall that are only slightly wider than these windows and extend vertically, encompassing continuous glazed multi-pane windows of the same width and with plain sills extending from the third to the sixth floor levels. Each four-story window is in turn surmounted at the seventh floor by a single-story multi-pane fixed window; the southern window at this level is capped with a lintel that intersects the seventh-story concrete band described previously.

The vertical, glazed inset along the northern edge of the facade terminates at a narrow concrete coping that circles the building at the flat roof line above the seventh floor; the vertical feature along the southern edge of the facade extends an additional story past the main block's roof line coping, culminating in the penthouse. This eighth story facade is relatively elaborately ornamented, having chamfered corners at either side and a single fixed, multi-light window surmounted by a smooth concrete hood mold emblazoned with a diamond shape at the center. This diamond aligns with a single row of chevrons identical to those on the main block, which extends from the hood mold to the narrow concrete coping that demarcates this feature's roof. This facade of the building is entirely intact.

The machine shop portion of this facade is of the same brick as the boiler house and stands three stories in height, with the third story level set back from the main block. This third story area has a single

garage-type door adjoined by a large, multi-pane window. The second story of the machine shop is five bays in width and has three-over-three double-hung sash. The area above the windows is ornamented by a raised brick pattern of five intersecting diamonds. Below the windows is a pent roof over three loading doors, two of which are overhead and one of which is a narrow wood paneled double door. A pedestrian door and window are located near the center of the loading bay area. This portion of the building, including the variance in loading doors, matches the building's architectural plans, and thus appear to be original to the building.[5] When constructed, the machine shop portion of this building was not connected to the power plant to the south; a non-historic, corrugated metal breezeway now spans the space between the two buildings.

1941 Boiler House; South-facing facade:
The south-facing facade of the boiler house faces the power plant and is connected to the power plant by the machine shop and enclosed breezeway. As a result, this facade is considerably more utilitarian in design, having as its only ornamentation the banded first floor patterning and a portion of the seventh-floor concrete band. The penthouse level has three bays, centered in this portion of the facade and aligned with the windows below; these consist of multi-light, fixed panes with horizontal casement transoms. At the seventh floor level in the western portion of this facade are four single-story windows identical to those in the eighth floor level, these are each directly aligned over four multi-light, fixed, four-story windows identical to those described on the south-facing facade. All but the westernmost of these windows, which is not aligned with an eighth-floor window, are set within a slightly recessed panel that extends from the first floor watercourse to the top of the main block's roof line coping. Adjoining these features on the east is a slightly raised panel with inset brick panels corresponding to the windows previously described; these features are original to the building. The lower portion of this panel and the lower three floors of the balance of the building are adjoined to the machine shop, described previously. Two large multi-paned fixed windows occupy the eastern portion of the lower visible facade. This facade of the building is also entirely intact and unaltered.

1941 Boiler House; East-facing facade:
This brick facade facing the river is entirely utilitarian. The main block of the boiler house is seven stories in height at this facade, including the basement, which is above grade at this facade; the seventh story is set back from the main block and the narrow end of the eighth floor is also set back from the seventh. The eighth floor has a single fixed window, while the seventh floor has three wide, full-story, multi-pane windows. The combined fifth and sixth floor levels have two windows identical to those previously described and two narrower such windows, while the fourth floor has windows of a normal height and roughly the same width as those above. The lower three floors also have similar windows, which are partially obscured by the lower portions of a fire escape that intersects each previous floor at a fire door along the northern edge of the facade. The machine shop portion of this facade is stepped from four stories at the south-facing facade of the Boiler House to three stories near the Power Plant, and has a similar pattern of small and large multi-pane windows set in a plain brick wall.

[5] "West Elevation, Boiler Room No. 25, Machine Shop & Office Building Commerce Street Power Plant." [Milwaukee: Wisconsin Electric Power Company] 1940.

1941 Boiler House; North-facing facade:
Unlike this building's other facades, this one consists of exposed steel girders, the interstices covered with corrugated metal panels set with large multi-pane windows. The basement level windows are protected by plywood; the rest are intact and exposed, although some individual panes have been broken by vandals. The panels and windows vary in width from one to two stories, depending on the the framing members adjoining. Although entirely utilitarian, this facade is original and unaltered, and reflects the logistical necessities required to conduct maintenance on a six-story boiler.

1941 Boiler House; Interior:
The interior of the boiler house consists of a massive open space framed by steel girders and trusses and accessed by a series of catwalks. Utilitarian support rooms are found at the seventh floor and around the perimeter of the boiler space. This space is, on the whole, entirely intact, with only minor changes to peripheral spaces resulting from the building's recent years of operation.

1941 Boiler House; Summary:
The Boiler House is highly intact, and is both visually and historically a significant portion of the site. Both the building's ornamented and utilitarian facades and interior significantly represent the property's function during this building's portion of the property's period of historic significance.

1911/1941 Switch House, Exterior:
The Switch House on the property, which was the location for administration and monitoring of the flow of electricity within and from the plant, was originally constructed in 1911 as a one-story building with multiple, slightly arched windows in the north-facing facade. Due to the irregular shape of the property and the proximity of the adjoining street, the building was constructed with a slight bend in its eastern wall, with the result that the building's north-facing facade is approximately five feet longer that the south-facing facade. During the improvements to the property in 1941, the Switch House building was doubled in size, having a second floor added in order to increase the number of switches the building contained. Installation of additional switches required most of the existing north facade windows to be bricked closed; a single original window in the north-facing facade and one in the northern portion of the west-facing facade remain, the latter at present being protected by plywood. The building is accessed by a single door at the western edge of the north-facing facade; this wood-paneled door lies behind a non-historic, corrugated metal passageway covering the stoop.

The added upper story is taller than the first story, as it incorporates an elaborate trussed roof structure necessary to carry the load of the brick and concrete switch booths contained inside. Two small attic windows project from the roof line along the north-facing facade. A single fixed, multi-light window is found in the second floor on the northerly portion of the west-facing facade and the western portion of the south-facing facades; another is found in the middle portion of the north-facing facade. A single-bay loading area extends from the north-facing facade of the first floor.

The east-facing facade of the switch house is marked on either side by a projection of the side facade walls slightly beyond the plane of the east-facing facade. These projections in turn support an exposed and suspended steel truss at the roofline. A single door at the second floor level opens onto a fire escape.

Both the first floor and the exposed basement level have four bays, the northernmost of which also consist of fire doors opening onto the fire escape. The three remaining bays consist of multi-light windows; those at the basement level are also protected by plywood. All of these features are intact to the period of the 1941 addition.

1911/1941 Switch House, Interior:
The interior of the switch house consists of two large rooms, one at each floor, which until 1988 housed the switching equipment necessary for regulating downtown power supply. Both floors are primarily occupied by booths designed to house the switching equipment; the booths are connected to each other in long rows separated by narrow passageways. The booths at the first floor have vertical walls of brick and rear walls, vertical dividers and shelves made of a fine-grained concrete. The first floor ceiling is supported by steel girders, and an open space at the west end of this floor housed the observation platform for the switch house's administrators. The booths at the second floor are constructed entirely of fine-grained concrete, and are of the same basic plan but somewhat taller and wider than those on the first floor. The second floor ceiling is crossed with steel trusses identical to that described previously at the east-facing facade of the building; these trusses support the roof and, by stiffening the building's steel skeleton, reinforce the building against the extremely heavy load of the switch booths on the second floor. The interior features are predominately intact to the period of the 1941 alteration; all of the features described are original and have received only minor alterations. As a result, both the exterior and interior of the switch house building are demonstrated to have good integrity to the period of the 1941 addition, which is an element of the property's period of historic significance.

Conclusion:
The Commerce Street Power Plant Complex is thus demonstrated to have excellent integrity in the context of its historic significance in the development of Milwaukee's electrical power production industry. The 1903-1912 building, which was historically the center of electric power production on the site, has excellent integrity in terms of its character-defining interior and exterior features; unlike many older industrial buildings, all of the power plant's windows and many of its doors and other functional features are entirely intact. Those alterations that have taken place were completed during the building's period of historic significance and reflect changes in power production technology during the historic period. The boiler house and switch house, which are also highly intact to the 1941 period, are contributing resources due to their role in the site's operation and continued historic significance during the later part of the historic period; these building's integrity is thus material to the integrity of the property as a whole. The Commerce Street Power Plant Complex, as a result, retains sufficient integrity to be considered eligible for the National Register of Historic Places under National Register Criterion A as a historically significant electric power production complex.

Commerce Street Power Plant	Milwaukee / Wisconsin
Name of Property	County and State

8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for the National Register listing.)

_X_ **A** Property is associated with events that have made a significant contribution to the broad patterns of our history.

___ **B** Property is associated with the lives of persons significant in our past.

___ **C** Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.

___ **D** Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations

(Mark "x" in all the boxes that apply.)

___ **A** owned by a religious institution or used for religious purposes.

___ **B** removed from its original location.

___ **C** a birthplace or grave.

___ **D** a cemetery.

___ **E** a reconstructed building, object, or structure.

___ **F** a commemorative property.

___ **G** less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance

(Enter categories from instructions)

INDUSTRY

Period of Significance

1903-1948

Significant Dates

N/A

Significant Person

(Complete if Criterion B is marked above)

N/A

Cultural Affiliation

N/A

Architect/Builder

Esser, Herman J.
Luber, F. A., Wisconsin Electric Co.

Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

Introduction:

The Commerce Street Power Plant[6] is eligible for the National Register of Historic Places under National Register Criterion A due to its historic significance as a primary center of electric power production in the city of Milwaukee during the first half of the twentieth century. Begun in 1903 and completed in 1912, the Commerce Street Power Plant became the workhorse of The Milwaukee Electric Railway and Light Company (TMER&L), providing most of the electric power available during a period of massive expansion, when electric power went from being a luxury to a necessity and fundamentally changed the technologies of commerce, industry, transportation, and the home.

Following construction of a larger plant elsewhere in 1921, the Commerce Street Power Plant became a smaller portion of the system's overall production; however, the Depression and the advent of World War II compelled the plant to stay in production, continuing to add to the system's electrical generating capacity and continuing to provide steam heat to downtown buildings, a small but profitable adjunct that had by the late 1930s become a necessity for the hundreds of downtown buildings reliant on piped-in steam from the plant for heat. The Commerce Street Power Plant expanded significantly in 1941, when the pressures of changing economies, impending war and the site's locational advantages prompted the company to invest significantly in the property, constructing a new building and doubling the capacity of an earlier structure on the site. Although it remained a relatively small portion of the overall system's capacity during World War II, the Commerce Street additions added significantly to the downtown power supply at a time when all available power production was demanded to fuel Milwaukee's war industries. The addition of the 1941 buildings illustrates the continued necessity of the Commerce Street Power Plant, and allowed the Wisconsin Electric Power Company (WEP Co.), the successor of TMER&L, to meet impending wartime power demands at a minimum of material cost.

The Commerce Street Power Plant was decommissioned in 1988. Of the extant historic power plants associated with the utility in Milwaukee, the Commerce Street Power Plant represents the most significant extant share of historic-era power production; it is also the only extant plant to retain its World War II-era additions. As a result, the Commerce Street Power Plant complex may be considered eligible for the National Register of Historic Places under National Register Criterion A due to its local historic significance as a power plant in Milwaukee.

History of Complex:

The Commerce Street Power Plant was commenced in 1903 on the site an earlier company's electric generation plants. The Badger Illuminating Company, the first street lighting firm in Milwaukee, powered an arc light system out of a converted flour mill starting in 1886,[7] during the industry's initial era of competing

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[6] The name "Commerce Street Power Plant" was commonly applied to the entire site, including the two 1941 buildings after their construction. In this text, the name "Commerce Street Power Plant" refers to the 1903-1912 building alone in contexts prior to 1940; the same term following that date is understood to refer to the entire property, and all three buildings as a unit. The 1903-1912 building, in contexts dating from after 1941, is referred to as the power plant, while the 1941 buildings are referred to as the switch house and the boiler house, respectively. Such terminologies correlate with the commonly used names for the site and buildings through the historic period.

[7] Gurda, *op cit.*, p. 10.

electrical firms serving fragmented portions of the initial traction and street lighting electricity markets. Like numerous other early Milwaukee power generating firms, Badger had been purchased by the Edison Electric Company, the precursor of The Milwaukee Electric Transportation & Light Company [hereafter referred to as TMER&L] in 1889. A series of such purchases during the late 1880s and 1890s resulted in the consolidation of the electric generating industry in Milwaukee; by the time of the company's 1896 reorganization under this name, the TMER&L provided virtually all of the commercially-available power in Milwaukee for both street lighting and electric trolleys. Since the Badger Plant was an arc-lighting facility, it could power only arc lights and could not provide electricity for either incandescent lights or electric rail systems; thus, the plant became completely obsolete within a few years of the consolidation, as the few arc lights in Milwaukee were replaced with the more popular incandescent systems.

The new plant was constructed to replace several older plants that the Edison Company and TMER&L had acquired in the course of absorbing its competitors. Prior to the Commerce Street Power Plant's construction, expansion of the electricity industry in Milwaukee had been hampered by several impediments, among which was the fact that steam engine-driven generators, direct current systems and other aspects of late nineteenth century power production technology physically and economically placed electricity beyond the reach of much of the potential market. In addition, these firms' available power supply, with their intensive capital investment necessities, had been repeatedly outstripped by intense and unanticipated increases in demand for power, with the result that such firms' abilities to capitalize on the small portion of the market physically and financially available to them was often limited by a shortage of available power supply. Although none of the older plants were more than seventeen years old, the rapid expansion of the use of electric power and the speed of technological innovation in this era quickly doomed the first buildings and their equipment to unplanned obsolescence.

Even one of TMER&L's facilities, the Oneida Street Power Plant, constructed in 1900 (NRHP 1984), had almost immediately become outdated due to its small size and its installation of direct current equipment. By the time of the Oneida Street Power Plant's construction, the industry in Milwaukee and elsewhere was moving to alternating current systems, which provided considerable economic benefits to power producers. Direct current generation severely limits the ability to transmit the electricity produced over distances; unlike alternating current, direct current cannot be stepped up or down via transducers to allow for more efficient, higher-voltage transmission necessary for wiring electricity to distant locations. As a result, direct current plants could serve only relatively small portions of their region, with the result that a much more expensive combination of smaller direct current plants would be required to serve the geographic area available to an alternating current system. Statewide, alternating current, which was a nonexistent technology in 1897, provided over fifty percent of the state's power by 1907 and 71 percent by 1912.[8] Direct current equipment and fixtures also cannot be retrofitted for alternating current, with the result that direct current plants became swiftly obsolete.

The Commerce Street Power Plant gave TMER&L a massive increase in capacity, and the alternating current and turbine technology it employed allowed the company to provide and price its service for a wider market. The first portion of the Commerce Street Power Plant was built in 1903; planned and identical additions in 1905 and 1911 resulted in a state-of-the-art facility that provided most of TMER&L's electric

[8] *ibid,* p. 54.

power supply during the early twentieth century period of enormous expansion. By 1906, at two-thirds its final size and capacity, the Commerce Street Power Plant had become a "transitional" plant, housing four 1500-kilowatt alternating current generators and four 2000-kilowatt direct current generators.[9] The 1911 portion of the building housed larger alternating current generators, and the direct current generators were replaced at a later date. The Commerce Street plant also utilized a technology new to Milwaukee power production, which would quickly become standard in power generation, by introducing the use of steam turbines to power the generators. Prior to the construction of the Commerce Street Power Plant, generators in Milwaukee and elsewhere had been powered by piston-driven steam engines. Steam turbines, which were more efficient and more powerful than steam engines, provided a significant benefit to electric power production: turbines could power the generators more efficiently than the old steam engines, with the result that the cost of producing electricity, and thus the price for which electricity could be sold, dropped. However, the transition was not immediate, and again the Commerce Street Power Plant initially employed both technologies. By 1906, the Commerce Street Power Plant had eight generating units, six of which were powered by Allis Chalmers cross-compound engines, and two of which were powered by Curtis steam turbines.[10] The 1911 expansion also employed turbines, and the remaining engines in the initial installation remained in operation until at least 1915.[11]

Generators require an engine or turbine to power them; steam engines and turbines, in turn, require a source of steam to operate. As a result, a considerable amount of the Commerce Street Power Plant's footprint, as well as of the attention given to the plant's design, was dedicated to the boiler section of the plant. The boiler room, which extended the length of all three portions of the building as discussed in section 7, housed by its completion 24 closely similar boilers,[12] providing two boilers per engine or turbine/generator combinations, although, as discussed below, the plant was designed so that any boiler could power any turbine or engine in the plant. The boilers were arrayed along each side of a track for ash cars; above the track were suspended a series of coal hoppers occupying the upper two stories of the four-story room. These coal hoppers, in turn. were connected with self-stokers to the boilers below. The means of transporting the coal from the loading area outside the building into the hoppers was considered novel and a potential innovation in standard power plant practice, and warranted a detailed description in a trade journal:

> One of the noteworthy features of the whole plant is the method of elevating coal to the bunkers. The method is entirely original to Mr. Davidson (TMER&L chief engineer) , and is in fact such a departure from the usual practice that many visiting engineers who were shown the plans doubted its practicability. It has, however, proven a most successful method both from the standpoint of economy and reliability. Two 24-inch I-beams over the

[9] "Commerce Street Power Plant of the Milwaukee Electric Railway and Light Company." Street Railway Journal [New York: Street Railway Publishing Company], July 1906, 124.

[10] *ibid.*

[11] "Seeing Commerce Street Power Plant." Rail & Wire [Milwaukee: TMER&L Co.] January 1915, 245.

[12] "Commerce Street Power Plant." Rail and Wire [Milwaukee: TMER&L Co.] October 1946,10.

> center line of the bunkers and immediately under the roof carry traveling trolley trains of special design which run the full length of the boiler room and at one end project out through a door several feet beyond the wall of the building. Coal is hauled to the plant in wagons provided with beds of special design.... After being weighed, a crane on one of the I-beams overhead lifts the bed containing the coal from the wagon by means of the chains attached to the hinged doors forming the bottom of the bed, and carries it into the building and over the bunkers.[13]

Once over the bunkers, the hinged bottoms of the beds were pulled apart with a hook apparatus, and the contents deposited into the bins. As a result, the boilers could be entirely self-feeding, with no mechanization required after the coal was deposited. Despite this innovation, the boiler room remained the most labor-intensive portion of the plant's operation; as late as 1946 the steam side of the operation employed 120 men, as opposed to seventeen working in the electric generation area.[14]

The Commerce Street Power Plant was intentionally designed to take up most of the current and anticipated expansion in load, or generating capacity, that would become necessary in the foreseeable future, and, as may be expected in the city's primary electricity producing plant, included special design precautions intended to safeguard the city's power supply against mechanical malfunctions. Unlike the Oneida Street plant and the older, independent firms' plants, Commerce Street was planned for expansion, and was designed to function virtually as a series of independent power plants. According to a national trade journal, which cited the plant's means of "securing independence of the several units," Commerce Street Power Plant was considered "distinctive and depart[ing] from the usual design of power plants of this size." As the article continues:

> In designing the plant two ideas might be said to have predominated. These were that the machinery should be systematically grouped and placed as closely together as consistent with the convenient and economical operation of the plant and accessibility for inspection and repairs, and that the separate units should be so equipped as to secure independent operation in case of derangement of any of the apparatus. Up to the switchboard the Commerce Street plant consists practically of eight separate plants installed in one building.[15]

This functional separation was maintained by means of limiting connections between various boiler and generator groupings. As the article continued:

> While such connection might at times facilitate the operation of the plant, it was thought best to provide no means of connection between them and thereby reduce the dependence of one-half of the station upon the other half...all of the reciprocating engines can be operated independently...so that they may be disconnected for repair without

[13] "Commerce Street Power Plant of the Milwaukee Electric Railway and Light Company." *op cit.,* 128.

[14] "Commerce Street Power Plant." *op cit.,* 10-11.

[15] "Commerce Street Power Plant of the Milwaukee Electric Railway and Light Company." *op cit.,* 124.

affecting the operation of the plant...[16]

Functional independence and continuity were further guaranteed by a series of connections which could be activated to allow any boiler within one of the groupings to power any engine or turbine in the section. The passage above described the property at two-thirds its final form and capacity; the final section was constructed in the same manner.

By the time the power plant building was nearing completion, growth in the system had already demanded alterations. As newer and more elaborate turbines were installed, the need for additional controls exceeded the capacity of the electrical galleries built into the power plant building. The initial portion of the switch house was constructed in 1911 to house this necessary equipment, and was responsible for the safe and efficient distribution of power through the urban area throughout the historic period. The switch house employed another innovation which had been pioneered in the Commerce Street Power Plant: the use of back-to-back switches, arranged in rows with a separating wall between each pair of switches in order to minimize the space occupied without impairing access to the equipment.[17] As discussed below, this innovation was also carried into the 1941 addition to this building.

By the time the Commerce Street Power Plant reached its present form in 1912, it had a capacity of 62,000 kilowatts, which was 15 times the company's entire capacity in 1896.[18] In 1912, Commerce Street represented 85% of the electric company's production;[19] since by this time TMER&L had a virtual monopoly in the city, Commerce Street was powering most of Milwaukee. As discussed below, this period was also marked by a massive increase in the number of electricity customers and the amount of electricity sold as the cost per unit of electricity decreased across the board. This evolution was clearly the result of the Commence Street Power Plant's increased production and efficiency; as a result, the Commerce Street Power Plant played a crucial role in the development of an electricity-powered industrial, domestic and commercial city, as discussed in greater detail below.

By the close of World War I, the Commerce Street Power Plant and the rest of the TMER&L production system had been pushed to capacity almost continually for several years; in the fall of 1920 the existing equipment was overloaded by fifty percent.[20] Following completion of the Commerce Street Power Plant, expansion in physical production capacity had not begun to keep up with the growth in demand; only one small, 4,500-kilowatt turbine had been added to the system following the Commerce Street building's

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[16] *ibid.*, p. 129.

[17] *ibid.*, p. 135.

[18] Gurda, *op.cit.*, p. 54.

[19] Bruce Lynch, "Commerce Street Power Plant, Milwaukee, Wis." [MSS 1996], 8.

[20] Gurda, *op.cit.*, p. 106.

completion, and that placed in part of a Commerce Street Power Plant electrical gallery in 1913.[21] In 1920, TMER&L began construction on a massive new plant which became known as Lakeside Power Plant [non-extant]. Evolutions in transmission technology since the construction of the Commerce Street Power Plant permitted the new plant to be located five miles from downtown, where the large open space needed for such a project was still available. The Lakeside plant also employed pulverized coal to fire its boilers, a landmark event in the history of power production, as it allowed more efficient use of fuel than with earlier lump coal systems. Lakeside immediately became the largest overall producer in the TMER&L system; by 1930, the Commerce Street Power Plant provided about 15 percent of the system's overall capacity, with Lakeside making up almost the entire balance.[22]

The Commerce Street Power Plant, however, continued to operate, providing both a portion of the system's electrical power and most of the steam heat for downtown Milwaukee. Throughout the 1920s and through much of the 1930s power and steam demands continued to climb, while an ambitious building program expanded Lakeside to its final capacity in 1930 and began a new power plant at Port Washington, thirty miles north of Milwaukee, in 1935. As demand continued to climb, however, the central location of the Commerce Street Power Plant made its further expansion desirable. In the late 1930s, as economic conditions improved and the United States' impending military commitment became apparent, the Wisconsin Electric Power Company, as the corporation had become known after a 1936 reorganization, began to perceive the need for an efficient expansion of its generating capacity. Following an elaborate analysis of options, including adding capacity at either Lakeside or Port Washington, WEP Co. opted to place its new investment at the Commerce Street Power Plant. As a trade journal described the decision,

> More than any other single factor, opportunities for improved system heat consumption from a combination of electric generating and central heating facilities influenced the location and arrangement of generating capacity recently put into service by the Wisconsin Electric Power Company at its Commerce Street station, Milwaukee.[23]

Unlike Port Washington and Lakeside, which were not connected to the steam heating system and were too distant from the downtown steam customer base to do so, expansion at the Commerce Street plant allowed the company to expand its profitable heating business in the downtown area, a business which the company both needed to maintain and wanted to expand. This could be done by siphoning steam from a high-pressure turbine through a second turbine to draw off excess heat and pressure, after which the remaining steam could be safely ducted into the steam mains heating downtown buildings. Since excess steam must otherwise be run through a condenser in order to be safely expelled from the plant, and since without the availability of this market the steam would become an undesirable and expensive waste product, rather than a profitable commodity, placing such an installation at Commerce Street provided sound economic benefits.

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[21] Gurda, *op.cit.*, p. 97. For location see "Plan view of the Commerce Street Station," in "Milwaukee's Largest Electric Station." Power, September 1914.

[22] Lynch, *op cit.*, p. 1.

[23] "Heating Steam Requirements Fix Commerce Street Design" Electrical World, [New York], December 27, 1941, p. 46.

The Commerce Street location also offered several other reasons for the installation. Since the plant had continued to operate on predominately its original equipment, much of its machinery, particularly its boilers, were considered over-age and increasingly difficult to maintain for constant use. Construction of a new, larger boiler would allow the oldest boilers to be used only when heating demand was extremely high. Since steam heating demand and electricity demand tended to come at alternating times of day, installation of new equipment at Commerce Street would allow that equipment to be operated continually, providing steam heat at night and electricity during the peak periods of the day. Such spinning reserve was a more efficient use of the equipment that would be possible if the equipment had to be periodically shut down due to low demand, as would be the case at either of the other plants; it also made it possible for electric generation to be increased quickly in response to an unexpected surge in demand, as would not be possible if the equipment were not operating at the time. Additionally, expansion at the Commerce Street site provided distinct advantages in terms of power delivery to the downtown commercial and industrial markets; expansion at this site eliminated the considerable cost of overhead transmission lines from outlying plants into the downtown area. In short, expansion at the Commerce Street Power Plant was determined to be the most prudent option available to the company: "It was felt that such an installation was logical, could always be used and, hence, would never produce a loss; on the other hand, it would improve costs where improvement was needed."[24]

Efficiency and economy were particular concerns of WEPCo. at this time, since rising operational and maintenance costs were offsetting much of the increase in revenues during the late 1930s. Although electricity use was up 20 percent during the first half of 1941 over the comparable period in 1940, state regulation of rates prevented the company from raising its rates to compensate for the increased cost of increased production. As an employee newsletter described the dilemma, "[t]he alarming thing is that expenses are increasing faster than the added revenues we collect for rendering the greater amount of service and both the increase in demand for service and much of the added expense are entirely beyond our control."[25] The resulting value placed upon efficiency and minimizing maintenance costs in the design and location of the new capacity provided much of the impetus behind the analysis outlined above.

As a result of this analysis, the Commerce Street Power Plant received a massive physical upgrade in 1941. The new boiler was housed in a seven-story building of steel frame with brick veneer constructed immediately north of the 1912 section of the plant; the boiler housed in the new building was powered by pulverized coal and had a rated steam output of 375,000 pounds per hour.[26] Within the plant, all four of the original 1,500-kilowatt engine-driven generators and two of the 2,000-kilowatt generators were removed[27] and replaced with a single 35,000-kilowatt turbo-generator, which increased the electricity production

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[24] *ibid,* p. 49.

[25] "How Are We Doing?" Rail & Wire [Milwaukee: Wisconsin Electric Power Company] September 1941, p. 1.

[26] "Commerce Street Plant Addition Approved." Rail & Wire [Milwaukee: Wisconsin Electric Power Company] September 1939, p. 8.

[27] "New Type Rectifier Saves Space at Commerce Street Plant." Rail & Wire [Milwaukee: Wisconsin Electric Power Company] February 1940, p. 9.

capacity of the plant by 25,000 kilowatts.[28] The turbine, constructed by Allis-Chalmers Manufacturing Company of Milwaukee, was expected to be the largest of its kind to date.[29] The project was expected to cost over four million dollars. As a result of this increased capacity and the increased complexity of the new system, the Switch House was also expanded, doubling in size with the addition of a second floor, which housed additional switch booths arrayed in the same manner but made slightly larger than the original 1911 installations. The new boiler and turbines were activated on December 29, 1941, three weeks after the Pearl Harbor attack. The improvements to the Commerce Street Power Plant alone added approximately seven percent to the entire system's overall capacity.[30] This addition came at a time when all available electrical production capacity had become essential, since Milwaukee's industrial complexes were producing at wartime capacities and were heavily reliant on electrical power.

Following World War II, the Commerce Street Power Plant's role in the WEP Co. production system was displaced by a series of new plants across the greater Milwaukee region and by the Point Beach Nuclear Power Plant in Manitowoc County, approximately one hundred miles north of Milwaukee. In 1969, following completion of the Valley Plant, which was the first new facility designed for cogeneration of electricity and heating steam, the Commerce Street Power Plant was put on standby status. The plant was retired in 1988, and has been unused since that time. This nomination is prepared in order to complete requirements for a federal Certified Historic Structures investment tax credit application associated with the rehabilitation of the building.

Impact of Property on Development of Milwaukee:
The availability of affordable and abundant electrical power made possible by the Commerce Street Power Plant profoundly impacted the development of Milwaukee. Following completion of the Commerce Street Power Plant, the TMER&L embarked upon massive marketing efforts geared toward the domestic, commercial and industrial sectors, which met with considerable success. Between 1909 and 1919 the number of TMER&L power customers in all sectors increased by over 600 percent, and the amount of power consumed by TMER&L customers doubled approximately every three years.[31] Customer bases were divided into domestic, commercial and residential niches, each group having differing interest in and uses for electricity, and each requiring a targeted marketing strategy.

Although household electricity use was clearly out of reach of all but the wealthy as late as 1910, when a TMER&L advertisement advised that electrifying household tasks "solves the domestic help problem,"[32] the domestic power load approximately doubled between 1912 and 1917, while the Commerce Street

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[28] "Commerce Street Plant Addition Approved." *op cit.*

[29] "New Turbine Ordered for Commerce Street." Rail & Wire [Milwaukee: Wisconsin Electric Power Company] October 1939, p. 3.

[30] "Commerce Street Power Plant." *op cit.* , p. 10-11.

[31] Gurda, *op cit.,* p. 80

[32] *ibid.,* p. 62.

Power Plant was providing almost all of the available load.[33] Sales of new electrical appliances such as ranges, washing machines and vacuum machines, all of which consume more electrical power per given unit of time than a light bulb, accounted for much of this increase, and were a staple of TMER&L's marketing to the middle-class domestic market during the 1910's and 1920's. In 1915, a TMER&L sale of electric flatirons represented as much new electrical load as that used by the entire Racine street railway, a portion of TMER&L's street railway system.[34] By the early 1920s, most households within the TMER&L's service area had at least electric lighting, and by the time the Depression reached its depths electric power had become a necessity of domestic life, a situation that helped keep the electric company afloat during the difficult years:

> Electricity had become a public necessity in the previous two decades; American society was wired to the power lines of the nation's utilities. Government relief efforts underscored just how important electricity had become. Nearly 20 percent of Milwaukee County's residents were on relief by 1933, and local agencies provided them with the bare essentials: food, clothing, rent and utilities, including electricity. One monthly check from Milwaukee County to TMER&L kept thousands of families supplied with light and power.[35]

Commercial customers also increased both in numbers and in amount of electrical use per customer. The few large properties in downtown Milwaukee that operated their own internal power plants were particular targets of TMER&L marketing efforts in the 1910s and 1920s; the company's field representatives were able to prove to almost all such companies that the utility could provide power more reliably and inexpensively than they could themselves. As a result, TMER&L frequently gained both such companies and their neighbors, to whom these firms frequently sold their excess production, as new customers. In urban commercial districts, TMER&L designed "White Way" lighting systems for neighborhood business associations, using powerful 300-watt bulbs in profusion. Amenities such as lighted signs also increased in popularity as the power supply became more affordable and reliable; by 1914 downtown Milwaukee had 200 electric signs, and by the early 1920s had over 600, up from little over ten such signs in 1910.[36] Both electric signs and white way street lighting served as powerful marketing tools, luring customers to these areas after dark and helping bring about a transformation in perceptions of city life. By 1919, "machine use" accounted for three-quarters of the system's peak load, and the company's industrial customers used more power than the entire street railway system.[37]

The Commerce Street Power Plant also played a significant role in another factor in Milwaukee's commercial growth. In 1897, the TMER&L had purchased a small street lighting company with a plant on

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[33] *ibid.*, p. 77

[34] *ibid.*, p. 77.

[35] *ibid.*, p. 141.

[36] *ibid., p.* 79.

[37] *ibid.*

Broadway [non-extant]. This plant, while a very small producer, had a profitable adjunct: the waste steam remaining from power generation was piped underground to a few nearby buildings on the east side of the river. Although the Broadway plant was too small to impact either the company's or the city's development, the heating portion of the operation was profitable, since it reused a power production by-product that would otherwise be wasted. In 1917 the TMER&L laid a steam tunnel under the Milwaukee River, connecting the Commerce Street Power Plant and the Oneida Street Power Plant, which was still operating and providing a small part of the system's capacity, to the existing underground steam system. Since the number of buildings that could be heated by cogeneration, or the simultaneous production of steam and electricity, was limited by the amount of steam-producing equipment in operation, the addition of the Commerce Street Power Plant to the steam system drastically increased the number of buildings to whom this profitable service could be offered. By 1919, 819 downtown buildings were heated by the steam system, up from 219 customers in 1909.[38] Reliable and inexpensive, this steam heat system allowed several landmark buildings, such as the 1914 Northwestern Mutual headquarters, to be constructed without any independent heating plant whatsoever. As discussed previously, the potential and profitability of cogeneration made possible by the connection of the Commerce Street Power Plant to the downtown steam heating system played a pivotal role in the company's decisions on its pre-World War II capital investments; the potential expansion of the heating steam market overrode many of the potential benefits of placing the investment at one of the newer plants.

The Commerce Street Power Plant, as the major producer of electric power in the TMER&L system, was also the primary power source behind the Milwaukee street railway and interurban transit system, which had a profound impact on the social and geographic development of the city and region in the era before the popularization of the automobile. The street railway system, which was born in the era prior to consolidation under the Edison Company, had provided much of the impetus for the initial phases of development of the electric production industry; as late as 1912 the TMER&L's electric railway system used 54 percent of the system's complete load (at the same time as the Commerce Street plant was providing 85 percent of the company total capacity).[39] The transit system's share of the company's power consumption and its income declined steadily after World War I, due to both increases in other power consumption sectors and the loss of streetcar travelers to the automobile. Prior to that decline, however, the TMER&L street car system fueled Milwaukee's expanding geographic range, as neighborhoods and neighborhood commercial districts expanded along the tracks into areas previously considered too distant from downtown to warrant suburban development, and outlying towns came to be within a short time's travel from downtown. Without the Commerce Street Power Plant to provide most of the power for the street railways, of course, this expansion would not have occurred in this fashion.

Context:
The Commerce Street Power plant is one of only two historic TMER&L and WEP Co. plants extant in Milwaukee; of the two plants extant, the Commerce Street property is the most intact to the entire historic period and was historically more significant in terms of providing power to the system and the city. The 1900 portion of the Oneida Street Power Plant at 108 E. Wells Street (NRHP 1984) remains and has

[38] "Program of the Open House Week November 08-13, 1926/ The Electric Company / Service First."

[39] Gurda, *op.cit.*, p. 80.

undergone an exterior restoration; the 1890 Edison Plant, which remained on site into the 1950s, and the 1939 boiler house addition to this property are both non-extant. This two-story building is located in the middle of the downtown area; its elaborate architectural ornamentation and pedimented gable align this building stylistically with nearby commercial and entertainment-oriented properties of a contemporary vintage. Much smaller than the Commerce Street Power Plant, and markedly non-industrial in appearance, this building is only six bays in length at each facade. As has been demonstrated, the Oneida Street Power Plant provided only a very small portion of the system's power supply, and thus was historically less important to the development and expansion of the electrical power production industry in Milwaukee. The Oneida Street Power Plant is considered historically significant due to the fact that research and testing leading to pulverized coal technology was conducted in this building; this testing, although significant in its own right, also underlines the minor role that the Oneida Street Power Plant played in the business and industry of electrical power production in Milwaukee during the period of historic significance. The loss of the 1890 and 1939 properties, which were extant and functioned during the period of historic significance, also impairs this building's ability to represent its limited role in the production of electric power and steam heat for Milwaukee during the period of historic significance. Of the two other power plants constructed during the period of historic significance, the Lakeside plant was demolished in 1983. The Port Washington Plant, while potentially significant in its own right, does not fall within the context of the Commerce Street Plant; it is located over twenty miles from the Commerce Street Plant, in a different city and county; it is also not yet of sufficient age to be considered for the National Register of Historic Places, having been completed in 1950. It should also be noted that the Port Washington plant represents a significantly later and different plant form and production methodology than is represented by the Commerce Street Plant's 1903-1912 building. One other building having a historically significant association with the TMER&L and WEP Co. is the Public Service Building, located at 231 W. Michigan Ave. This building's significance stems from its roles as the headquarters of company administration, as the company's best-known public landmark, and as the primary terminal for the street railway system. A small amount of power was produced by a small generator in this building's basement for a brief period; between the building's completion in 1906 and the construction of the steam tunnel to the Commerce Street Power Plant in 1917, a series of small generators in the basement of the building provided a small amount of power to street cars near the building and some steam heat to a few nearby buildings. These functions, however, were clearly considered a minor aspect of the building's functions, which included administrative offices, an elaborate meeting hall, employee facilities and a company store. The Public Service Building, as a result, may be considered an important historic resource in terms of the history of the marketing, employee relations, and administrative operations of the TMER&L and WEP Co.; it does not, however, represent the vital production aspect of the industry exemplified by the Commerce Street Power Plant complex.

Conclusion:

The Commerce Street Power Plant complex is eligible for the National Register of Historic Places under National Register Criterion A due to its historically significant role in the history and development of the electric power production industry in the city of Milwaukee. The property as extant represents a primary center of electric power production in the city of Milwaukee, and illustrates both the technological evolutions and the increasing importance of electric power production during the first half of the twentieth century, when the power supplied by this complex allowed the use of electricity to become as essential component of most aspects of urban life. The property uniquely and excellently represents this essential element of the development of twentieth century life, and represents a significant aspect of the commercial and industrial growth of the city of Milwaukee.

Archeological Potential:

The Commerce Street Power Plant is built upon fill deposited in the mid-nineteenth century; as a result no prehistoric materials may be expected on the site. Following this alteration, the property has been extensively disturbed by mid-nineteenth to mid-twentieth century constructions. It appears unlikely that historic-era archeological materials predating the extant structures may be found on the site.

9. Major Bibliographic References

Bibliography

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous Documentation on File (NPS):

___preliminary determination of individual listing (36 CFR 67) has been requested
___previously listed in the National Register
__previously determined eligible by the National Register
___designated a National Historic Landmark
___recorded by Historic American Buildings Survey
#_____
___recorded by Historic American Engineering Record
#_____

Primary location of additional data:

_X_ State Historic Preservation Office
___Other State Agency
___Federal Agency
___Local government
___University
_X_ Other
Name of repository:
Wisconsin Electric Power Co.
Milwaukee Historical Society

10. Geographical Data

Acreage of Property three acres

UTM References (Place additional UTM references on a continuation sheet.)

1. //1/6/ /4/2/5/6/0/0/ /4/7/6/6/2/2/0/
   Zone Easting Northing

2.
   Zone Easting Northing

3.
   Zone Easting Northing

4.
   Zone Easting Northing

___see continuation sheet

Verbal Boundary Description (Describe the boundaries of the property on a continuation sheet)

Boundary Justification (Explain why the boundaries were selected on a continuation sheet)

11. Form Prepared By

name/title Della G. Rucker
organization Rucker Historical Research
Date Feb 24, 1998
street & number P.O. Box 204
Telephone 920/432-7044
city or town Green Bay
state WI
zip code 54305-0204

Major Bibliographical References:

"75 Years of Service." Supplement to Outlet. Wisconsin Electric Power Company, Milwaukee, 1971.

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"Lakeside: a Record of Achievement. " The North American Company / TMER&L,1924.

Lynch, Bruce. "Commerce Street Power Plant, Milwaukee, Wis." MSS, in possession of Eppstein Uhen Architects, Milwaukee, 1996

"New Turbine Ordered for Commerce Street." Rail & Wire. Wisconsin Electric Power Company, Milwaukee, October 1939, 3.

"New Type Rectifier Saves Space at Commerce Street Plant." Rail & Wire. Wisconsin Electric Power Company, Milwaukee, February 1940, 9-10.

"Plan view of the Commerce Street Station," in "Milwaukee's Largest Electric Station." Power, September 1914.

"Program of the Open House Week November 08-13, 1926/ The Electric Company / Service First."

Schwada, Joseph. A survey of the electric and heating requirements of municipal buildings and public functions and a report on the feasibility with a municipal power plant. City of Milwaukee. MSS, located at Milwaukee County Historical Society, 1933.

"Seeing Commerce Street Power Plant." Rail & Wire [Milwaukee: TMER&L Co.] January 1915, 245-246.

"West Elevation, Boiler Room No. 25, Machine Shop & Office Building Commerce Street Power Plant." Wisconsin Electric Power Company, Milwaukee, 1940.

Boundary Description:

The nominated property is defined as follows:

A irregularly-shaped parcel lying at a northwesterly angle to the cardinal directions, having as its southeast boundary the northwesterly bank of the Milwaukee River and having as its northwest boundary the public right-of way associated with Martin Luther King, Jr. Drive. The southwest boundary may be drawn as a line parallel to the southwesterly facade of the Switch House, lying 10 feet distant from the facade and extending in a straight line to its intersection with the bank of the Milwaukee River and with the public right-of-way. The northeast boundary may be drawn as a line parallel to the northeasterly facade of the Boiler House, lying 10 feet distant from the facade and extending in a straight line to its intersection with the bank of the Milwaukee River and with the public right-of-way.

Boundary Justification:

The above boundaries incorporate the entire parcel legally associated with the nominated property and incorporate the lands historically associated with the building's industrial functions. The boundaries exclude properties to the north and south that have no historic association with the property's historic function.

Commerce Street Power Plant	Milwaukee / Wisconsin
Name of Property	County and State

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps
A **USGS map** (7.5 or 15 minute series) indicating the property's location.
A **sketch map** for historic districts and properties having large acreage or numerous resources.

Photographs Representative **black and white photographs** of the property.

Additional Items (Check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of SHPO or FPO.)

name Wisconsin Electric Power Company
street & number 231 W. Michigan Ave., P.O. Box 2046
telephone 414/221-2719
city or town Milwaukee state WI zip code 53201

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Projects, (1024-0018), Washington, DC 20503.

NPS Form 10-900-a
(Rev. 8-86)
Wisconsin Word Processing Format
(Approved 1/92)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section Photos
Page 1
Commerce Street Power Plant, Milwaukee, Milwaukee County, Wisconsin.

Photo #1 of 17
COMMERCE STREET POWER PLANT
Milwaukee, Milwaukee County
Photo by D.G. Rucker, February 10, 1998
Negative at State Historical Society of Wisconsin
Switch House, view looking east.

Photo #2 of 17
COMMERCE STREET POWER PLANT
Milwaukee, Milwaukee County
Photo by D.G. Rucker, February 10, 1998
Negative at State Historical Society of Wisconsin
Switch House, view looking southeast.

Photo #3 of 17
COMMERCE STREET POWER PLANT
Milwaukee, Milwaukee County
Photo by D.G. Rucker, February 10, 1998
Negative at State Historical Society of Wisconsin
Switch House, view looking southeast.

Photo #4 of 17
COMMERCE STREET POWER PLANT
Milwaukee, Milwaukee County
Photo by D.G. Rucker, February 10, 1998
Negative at State Historical Society of Wisconsin
Switch House, view looking northeast.

Photo #5 of 17
COMMERCE STREET POWER PLANT
Milwaukee, Milwaukee County
Photo by D.G. Rucker, August 26, 1997
Negative at State Historical Society of Wisconsin
Switch House, view looking west.

Photo #6 of 17
COMMERCE STREET POWER PLANT
Milwaukee, Milwaukee County
Photo by D.G. Rucker, February 10, 1998
Negative at State Historical Society of Wisconsin
Power Plant, view looking northeast.

Photo #7 of 17
COMMERCE STREET POWER PLANT
Milwaukee, Milwaukee County
Photo by D.G. Rucker, February 10, 1998
Negative at State Historical Society of Wisconsin
Power Plant, view looking southeast.

Photo #8 of 17
COMMERCE STREET POWER PLANT
Milwaukee, Milwaukee County
Photo by D.G. Rucker, February 10, 1998
Negative at State Historical Society of Wisconsin
Power Plant, view looking west.

Photo #9 of 17
COMMERCE STREET POWER PLANT
Milwaukee, Milwaukee County
Photo by D.G. Rucker, February 10, 1998
Negative at State Historical Society of Wisconsin
Power Plant, view looking southwest.

Photo #10 of 17
COMMERCE STREET POWER PLANT
Milwaukee, Milwaukee County
Photo by D.G. Rucker, February 10, 1998
Negative at State Historical Society of Wisconsin
Office Annex of Boiler House, view looking east.

Photo #11 of 17
COMMERCE STREET POWER PLANT
Milwaukee, Milwaukee County
Photo by D.G. Rucker, February 10, 1998
Negative at State Historical Society of Wisconsin
Boiler House, view looking northeast.

Photo #12 of 17
COMMERCE STREET POWER PLANT
Milwaukee, Milwaukee County
Photo by D.G. Rucker, February 10, 1998
Negative at State Historical Society of Wisconsin
Boiler House, view looking east.

Photo #13 of 17
COMMERCE STREET POWER PLANT
Milwaukee, Milwaukee County
Photo by D.G. Rucker, February 10, 1998
Negative at State Historical Society of Wisconsin
Boiler House, view looking south.

Photo #14 of 17
COMMERCE STREET POWER PLANT
Milwaukee, Milwaukee County
Photo by D.G. Rucker, August 26, 1997
Negative at State Historical Society of Wisconsin
Boiler House, view looking west.

Photo #15 of 17
COMMERCE STREET POWER PLANT
Milwaukee, Milwaukee County
Photo by D.G. Rucker, August 26, 1997
Negative at State Historical Society of Wisconsin
Interior Power Plant, turbine room, view looking north.

Photo #16 of 17
COMMERCE STREET POWER PLANT
Milwaukee, Milwaukee County
Photo by D.G. Rucker, August 26, 1997
Negative at State Historical Society of Wisconsin
Interior Power Plant, boiler room, view looking northwest.

Photo #17 of 17
COMMERCE STREET POWER PLANT
Milwaukee, Milwaukee County
Photo by D.G. Rucker, August 26, 1997
Negative at State Historical Society of Wisconsin
Interior Switch House view looking southeast.