NOMINATION OF HISTORIC BUILDING, STRUCTURE, SITE, OR OBJECT
PHILADELPHIA REGISTER OF HISTORIC PLACES
PHILADELPHIA HISTORICAL COMMISSION

SUBMIT ALL ATTACHED MATERIALS ON PAPER AND IN ELECTRONIC FORM ON CD (MS WORD FORMAT)

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1. ADDRESS OF HISTORIC RESOURCE (must comply with an Office of Property Assessment address)

Street address: 1325 Beach Street, Philadelphia, PA

Postal code: 19125 Councilmanic District: 1

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2. NAME OF HISTORIC RESOURCE

Historic Name: Philadelphia Electric company Delaware Generating Station

Common Name: PECO Delaware Station

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3. TYPE OF HISTORIC RESOURCE

☒ Building ☐ Structure ☐ Site ☐ Object

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4. PROPERTY INFORMATION

Condition: ☐ excellent ☐ good ☒ fair ☐ poor ☐ ruins

Occupancy: ☐ occupied ☒ vacant ☐ under construction ☐ unknown

Current use:

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5. BOUNDARY DESCRIPTION

Please attach a plot plan and written description of the boundary.

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6. DESCRIPTION

Please attach a description of the historic resource and supplement with current photographs.

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7. SIGNIFICANCE

Please attach the Statement of Significance.

Period of Significance (from year to year): from 1917 to 1924

Date(s) of construction and/or alteration: 1917-1920, 1922-1924, 1953

Architect, engineer, and/or designer: John T. Windrim + William Eglin

Builder, contractor, and/or artisan: Stone + Webster

Original owner: Philadelphia Electric Company

Other significant persons:

CRITERIA FOR DESIGNATION:

The historic resource satisfies the following criteria for designation (check all that apply):

- ☒ (a) Has significant character, interest or value as part of the development, heritage or cultural characteristics of the City, Commonwealth or Nation or is associated with the life of a person significant in the past; or,
- ☒ (b) Is associated with an event of importance to the history of the City, Commonwealth or Nation; or,
- ☐ (c) Reflects the environment in an era characterized by a distinctive architectural style; or,
- ☒ (d) Embodies distinguishing characteristics of an architectural style or engineering specimen; or,
- ☒ (e) Is the work of a designer, architect, landscape architect or designer, or engineer whose work has significantly influenced the historical, architectural, economic, social, or cultural development of the City, Commonwealth or Nation; or,
- ☐ (f) Contains elements of design, detail, materials or craftsmanship which represent a significant innovation; or,
- ☐ (g) Is part of or related to a square, park or other distinctive area which should be preserved according to an historic, cultural or architectural motif; or,
- ☒ (h) Owing to its unique location or singular physical characteristic, represents an established and familiar visual feature of the neighborhood, community or City; or,
- ☐ (i) Has yielded, or may be likely to yield, information important in pre-history or history; or
- ☒ (j) Exemplifies the cultural, political, economic, social or historical heritage of the community.

8. MAJOR BIBLIOGRAPHICAL REFERENCES

Please attach a bibliography.

9. NOMINATOR PLEASE SEE ATTACHED

Name with Title_____ Email_____

Organization_____ Date_____

Street Address_____ Telephone_____

City, State, and Postal Code_____

Nominator ☐ is ☐ is not the property owner.

PHC USE ONLY

Date of Receipt: 4 Aug. 2015 (1st draft); 3 March 2016 (2nd draft); 26 April 2016 (final edits)

☑ Correct-Complete ☐ Incorrect-Incomplete Date: 26 April 2016

Date of Notice Issuance: 28 April 2016

Property Owner at Time of Notice

Name: Delaware Station LLC

Address: 1412 Mt. Vernon St.

City: Philadelphia State: PA Postal Code: 19130

Date(s) Reviewed by the Committee on Historic Designation:_____

Date(s) Reviewed by the Historical Commission:_____

Date of Final Action:_____

☐ Designated ☐ Rejected

Nomination of Historic Building, Structure, Site, or Object

Philadelphia Register of Historic Places

Philadelphia Historical Commission

5. Boundary Description:

BEGINNING at a point on the Southerly side of Beach Street (Right of Way and open 50 feet wide), at the former intersection of E. Montgomery Avenue and Beach Street, then extending a distance of 930 feet 4 ¾ inches in the Westerly direction measured along the said Southerly side of Beach Street, thence extending Southerly along the said Penn Treaty Park 492 feet 9 5/8 inches to a point, thence extending Easterly along the said Delaware River 198 feet to a point, thence extending Southerly 241 feet 3 5/8 inches to a point, thence extending Easterly 72 feet 8 3/8 inches, thence extending Northerly 233 feet 4 ¾ inches, thence extending Easterly 655 feet 3 5/8 inches, thence extending Northerly 523 feet being the first mentioned point and beginning,[1] (Figure 1, Figure 1A).

6: Description:

The Philadelphia Electric Company Delaware Station (Figure 2) is a large-scale reinforced concrete and steel power generating plant, which stands North of the Delaware River, and Northeast of Penn Treaty Park, located at 1325 Beach Street, in the Fishtown neighborhood of Philadelphia, Pennsylvania, (Figure 3, Figure 4, Figure 5). The area in which it is located is relatively commercial as it is part of the developing Delaware riverfront, but it is also within a quarter mile of residential streets. The development in the area ranges from early 19th century for most residential units, to early 20th century commercial properties. The station's primary structure, measuring at 223,000 square feet, faces Beach Street and is set back approximately 40 feet from the property line. A driveway entrance and gate are both located at the Northwest corner of the site, acting as a divide from Penn Treaty Park. The property is incredibly vast as the only nearby greenery is Penn Treaty Park along the western façade of the building.

The form of the building is essentially a square in plan, measuring at 367 feet in length, 373 feet in width and approximately 91 feet in height, (Figure 6, Figure 7).[2] The site consumes 16 acres of space, 6 which are below sea level, 5 acres are the original building itself, 4 acres are parking, (which once housed the 1953 addition of the power plant) and 1 acre holds a back-up generator. The architectural style is representative of Industrial architecture combined with the details and monumentality of the Classical Revival era. The power station consists of reinforced concrete (with wood casing, constructed in 1917 and 1919-1921) as well as concrete and steel frame (1922-1924) as the primary exterior materials and structural components. The foundation is composed of steel caissons, which are compiled with reinforced concrete. This technique was chosen in reference to the shipbuilding that had previously taken place on the site because caissons are not only watertight but also versatile in a great number of soil conditions, are fairly economical in their installation, and bear high load capacities more than most other structural techniques.[3]

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[1] Deed Description, 1325 Beach Street, City of Philadelphia.

[2] "Compact Reinforced-Concrete Generating Station in Philadelphia," Electrical World Vol. 77, No. 21 (1921): 1146.

[3] "Caisson (engineering)," https://en.wikipedia.org/wiki/Caisson_(engineering)

In terms of circulation and porch access, there is exterior circulation along the Northwest and Northeast corners of the sites appearing as covered balconies. The roof is a flat roof with a potential asphalt cladding. The dentil cornice aligns each of the four facades and the common roof, which can be seen virtually everywhere on the site, (Figure 8). Along the rear facing façade, (along the river) the rooftop has 8 copper smokestacks, showing signs of degradation as patina and rust become more visible, (Figure 9) other miscellaneous mechanical exhaust units, as well as a number of pilot houses for stair access, (Figure 10).

The exterior steel doors on the ground level are prominent as their post and lintel structure exceeds the height of the first story windows, are centered within the building's exterior facades and are either recessed, in the case of the East façade, or extruded, like the North façade. Each of the industrial sized windows (present on each façade) consists of two steel mullions dividing the adjacency of the 8 individual glass panes. (A 2:4:2 relationship). These windows are the main source of natural light for the turbine hall, which encompasses all six floors, (Figure 11). Assuming they are the original windows, they appear to be non-operable and potentially single or double pane, depending on their degree of insulation.

The Delaware Generating Station stands in relatively sufficient structural condition, with minimal degradation to the reinforced concrete façade. Façade degradation is limited to exposure of rebar, (Figure 12). There are also a few area of water infiltration seen on the West façade, (Figure 13). Cracking of the façade, as seen on the Southwest corner, could be due to weather or differential settlement, (Figure 14). Due to outside neglect and vacancy, there are a number of glass window panes that are shattered, (Figure 15).

Prior to demolition in 2008, an addition to the power plant was constructed in 1953 in response to the demand for electricity. Now the Eastern side of the parcel is vacant and houses a parking lot.

North (front) Façade:

The front façade and its windows are facing North. The first floor's façade exists as eight ashlar courses which is unique from the monolithic reinforced concrete above. The windows on the first floor are significantly smaller but proportional to the windows described above. One significant element of the front façade is that it mostly consists of the Switch House; it is detached and essentially its own entity except for a central circulation space from the main building. It is 11 window bays in width. Another notable detail is that there are exhaust structures on the exterior 2nd story of the building which can be seen (from left to right,) on the 1st, 3rd, 4th, 8th, 9th, and 11th window bays of the front façade, (Figure 16).

East (side) Façade:

The East façade has 11 bays. The 4th bay from the Northeast corner is inset approximately 15 feet which contains door access to the first floor of the turbine hall. The windows are fully elongated spanning from the 2nd to the 5th story. The first story and its features, as mentioned in the front façade description, remain consistent around the entire perimeter of the building. The East façade faces the existing parking lot, (Figure 17, Figure 18).

South (rear) Façade:

The South façade is constructed of 10 bays. 5 bays are designated for each of the two boiler rooms, No. 1 being the first of the two, which are purposely separated by the centered maintenance shop and storage. The first floor again remains the same in terms of its façade materials and window relationships. There is rear door access in the center, which faces the coal tower at the rear most point of the site, (Figure 19).

West (side) Façade:

The West façade is composed of 11 bays and is symmetrical to the East façade, where the 4th bay from the Northwest corner is recessed 15 feet, containing door access. The windows are fully elongated from 2nd to the 5th floor and the first floor is again consistent in composition and form, (Figure 10, Figure 20).

Primary vs. Secondary Structures- Blue: Main Parcel and (1) Switch House. Red: (2) Coal Tower, (3) Ash Bunker, (4) Screen House, (5) Gas Turbines, (6) Fuel Oil Storage Tanks. Underlay Photograph: *Pictometry, 2014*

Other Notable Existing Structures: (see above)

1) Switch house: Secondary Structure, Contributing, circa 1920

The switch house was a contributing structure to the property and the power plant process. Once the generators had generated electricity, it was passed through the ring bus and was examined for short circuits. This was the final step of the main power plant's process to which the electricity was then delivered to a substation.[4] The switch house is the same height as the power plant itself, measuring approximately 6 stories. Its material, foundation type, roof form and cladding are all of the same as what

[4] Historical American Buildings Survey, "Plant Process," Delaware County Electric Company, Chester Station. http://www.loc.gov/pictures/resource/hhh.pa3680.sheet.00010a/

is seen in the main building. As mentioned previously, it is attached to the main building where it encompasses the North (front) façade.

2) Coal tower: Outbuilding, Previously Attached Auxillary Structure, Contributing, circa 1920

The coal tower was also a contributing structure to the power plant and its process. The tower was initially attached to the main building by a main-incline conveyor, which functioned by a motor, hoisting, storing and feeding coal into the bunkers. The coal was then transported to the cross-conveyors above the boilers.[5] The excess coal was stored about a half mile into the Delaware River on Petty Island.[6] The coal tower is located at the rear most point of the site, on a centrally located pier in the Delaware River. It is approximately 5 stories in height. Its material, foundation type, roof form and cladding are all the same as what has been previously mentioned. However, there is a cross-arm with clamshell hoisting buckets, located on the roof which was part of the gravity-fed coal delivery process.[7] Its windows are arranged as 3 bays for each floor, significantly smaller than those seen on the main power station, and are located on the north and south facades. There is a central door access located on the first floor. Unlike the main building, there is no dentiled cornice indicating any source of trim or notable details.

3) Ash Bunker: Outbuilding, Contributing, circa 1921

The ash bunker was another contributing component to the power plant process. It is not attached to the power plant but was crucial in ash removal by the use of rail cars. Located at the rear of the site, it sits west to the pier of the coal tower. It stands approximately 3 stories in height. Again, its material, foundation type, roof form and cladding are all the same as what has been previously mentioned. However, there is another steel structure located on the roof which assisted in the ash removal process. Also, the building appears to be elevated on reinforced concrete-encased piers. There are not any windows, except perhaps small openings for exhaust on the north and south facades. There is door access on the first floor. In the upper levels, there is door access on the east and west facades. These upper level doors each lead to a balcony and a ladder, which allowed roof access for its users. Like the coal tower, there is not any notable detail or trim.

4) Screen house: Outbuilding, Contributing, circa 1921

The screen house was another source of contribution to the power plant process. It was attached to the power plant by an intake tunnel and it sits at the rear west corner of the site, adjacent to the Delaware River. It was significant to the power plant as it was used to screen or filter the river's water which was used to condense the steam exhausted from the turbines for recycling the condensed water back into the boiler feed water system.[8] It is approximately one story in height. Its material, foundation type, roof form and cladding are all the same as what has been previously mentioned. The building's plan appears as an "L" form, emphasizing its corner condition. There are windows aligning each of the facades, six of which are located at the rear. The number and exact location of the remaining

[5] Interview with Walt Masny, (Former association with PECO) in communication via email, January 2016.
[6] Stone & Webster Journal, "Construction Features of the Delaware Power Station," Vol. 28, January-June 1921. 409.
[7] Interview with Walt Masny, January 2016.
[8] Interview with Walt Masny, January 2016.

windows are difficult to decipher through photographs. Like the other previous structures, there is not any significant trim or detail.

5) Gas turbines: Outbuilding, Non-contributing, circa 1967-1969

The gas turbines are also located at the northwestern corner of the site and are non-contributing. They were installed when the power plant began its transformation from coal to oil, therefore they were not significant to the original construction and distribution methods.

6) Fuel oil storage tanks: Outbuilding, Non-contributing, circa 1972

The fuel oil storage tanks are located at the northeastern corner of the site and are non-contributing. They were installed when the power plant converted from coal to oil, therefore they were not contributing to the original construction and distribution methods.

7. Significance:

The Philadelphia Electric Company Delaware Station, of 1325 Beach Street, is worthy of local recognition as being eligible for the list of the Philadelphia Register of Historic Places. As mentioned in the Historical Commission's ordinance in Section 14-2007(5), of the Philadelphia Code, Delaware Station can be considered for the Philadelphia Register based on the following criteria: (A), (B), (D), (E), (H), (J):

(a) Has significant character, interest or value as part of the development, heritage or cultural characteristics of the City, Commonwealth or Nation or is associated with the life of a person significant in the past
(b) Is associated with an event of importance to the history of the City, Commonwealth or Nation
(d) Embodies distinguishing characteristics of an architectural style or engineering specimen
(e) Is the work of a designer, architect, landscape architect or designer, or engineer whose work has significantly influenced the historical, architectural, economic, social, or cultural development of the City, Commonwealth or Nation
(h) Owing to its unique location or singular physical characteristics, represents an established and familiar visual feature of the neighborhood, community or City
(j) Exemplifies the cultural, political, economic, social or historical heritage of the community.

The History of Electricity

Electricity was initially introduced as a luxurious amenity for the public, where only about 5% of homes had access until 1910 but within the next decade, was in great demand at a marketable rate for both the public as well as private corporations.[9] This then of course called for the merging of electric companies in order to provide a greater service as well as the construction of centralized power stations, which could house a great amount of electricity for neighboring towns and cities. For contextual and historical purpose, prior to World War I, only about 15% of homes received electricity, however, because of the demand from the War itself, this statistic quickly rose to about 70% by the year 1930.[10] This is due to the introduction of the transformer, allowing for more efficient production of electricity where it could transmit a higher voltage, with a lower current. This proved to be more economical as a larger production actually brought down the costs, resulting in large central power stations. [11]

The Philadelphia Electric Company

Founded in the year 1881, the Philadelphia Electric Company claimed itself as one of the primary electric companies of the contemporary era by stating, "If it isn't electric, it isn't modern," as their slogan for potential customers.[12] At the end of World War I in 1918, there were 103,015

[9] Aaron V. Wunsch, "Form, Function and Public Relations: The American Urban Power Station, 1880-1930," (Masters thesis, University of Virginia, 1995). 18.
[10] Wunsch, 72.
[11] "Electricity," last modified February 12, 2015. http://en.wikipedia.org/wiki/Electricity
[12] Wunsch, 68.

customers; just five years later the number of customers almost tripled to 305,644.[13] In response to this demand for electricity, the number of employees drastically increased over the course of twenty years.

This story of success inevitably led to the progression of a competitor in 1882, United Gas Improvement Company, (today known as UGI). The Philadelphia Electric Company, however, still strove for the top candidacy in the electrical world. [14] Between the years 1926 and 1930, Philadelphia Electric Company eventually merged with the Pennsylvania Power and Light Company along with New Jersey's Public Service Electric and Gas Company in order "to create the largest power grid in the country."[15]

Their rapid evolvement was due to the team work of a few individuals, Joseph McCall leading up to the turn of the century as President, because of some financial burdens and political sanctions, later John T. Windrim and William Eglin took roles as designer, engineer, presidents and directors of the company. Collectively, some of the most well-known stations that were built are those of a similar architectural style, Chester, Delaware and Richmond Generating Stations, otherwise known as Windrim and Eglin's "trio" stations.[16]

Transitioning from coal fired power plants to oil, Philadelphia Electric Company later merged with Exelon Corporation in the year 2000 in order to spread their services to a greater range of customers. Today Exelon services 48 U.S. States and Canada, making them one of the most competitive power generating companies in the nation.[17]

John T. Windrim & William C.L. Eglin

Born on February 14th, 1866, John Torrey Windrim inevitably fell into the hands of architecture with a father carrying such an exquisite Philadelphia architecture repertoire. James Hamilton Windrim began his career as Director of Public Works which resulted in his search for an architectural context. At the age of 27, he then became the architect of the medieval Norman style Philadelphia Masonic Temple. Just a few years later in 1871, he had the opportunity to be the architect of the Stephen Girard College, for which he designed a few buildings across the institution's campus. To even further emphasize, he was appointed as the City Architect of Philadelphia in 1892.[18]

While in the height of James's architecture career, his son, John, began training in his father's office in the year 1882, (Figure 21). Passing ideas and inspiration from one generation to the next, John revolutionized the meaning of Philadelphia architecture from the 19th to 20th centuries. John T. Windrim was well-known and active in the Philadelphia community, being an elect of the Philadelphia American Institute of Architecture chapter in 1901, President of the Evening Telegraph Company as well as being a member of the Union League, Architectural League of New York, and the Philadelphia Art Club.[19]

Once established, John Windrim favored a few particular architectural styles. Like his father, cultural and civic buildings were John's specialty. He is most widely known as the architect of the Franklin Institute in 1934 and the Philadelphia Municipal Court in 1941. Although typically utilizing

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[13] Nicholas B. Wainwright, History of the Philadelphia Electric Company (1881-1961). (Philadelphia: Library of Congress, 1961). 214.
[14] J.P. Webster, Vanishing Philadelphia: Ruins of the Quaker City (Charleston: The History Press, 2014). 13.
[15] Wunsch, 63.
[16] Webster, Vanishing Philadelphia: Ruins of the Quaker City.
[17] "Exelon: Sustainable Growth," last modified 2015. http://www.exeloncorp.com/aboutus.aspx
[18] Webster, Vanishing Philadelphia: Ruins of the Quaker City, 18.
[19] "Windrim, John Torrey (1866-1934)," last modified 2015. http://www.philadelphiabuildings.org/pab/app/ar_display.cfm/21563

Beaux Arts techniques, Windrim chose to implement monumentality with minimal detailing in his industrial structures. As part of the "Power-Plant-Beautiful" Movement, Windrim perhaps believed that the industrial architecture he would construct deserved Classical Revival as a sign of democracy and progress for the recently founded nation.[20] As the style typically dates from 1895-1950, the Delaware Station encompasses many of the characteristics seen in Classical Revival architecture. Some of these features include its monumentality, reserved ornament, monolithic structure, dentiled cornice, flat roof, as well as centrality and symmetry in its location of windows and doors.[21] Because of this unique architectural style, satisfying Criterion D, the Delaware Station, "embodies distinguishing characteristics of an architectural style or engineering specimen."

The existence of power plants became a great environmental concern, so efficiency in coal-burning techniques was a necessity in order to beautify these hierarchical structures. "Throughout the 1890s, American cities began to celebrate their public institutions by enshrining them in monumental buildings connected by broad avenues. Central stations paid their respects to the cleaner, grander and more orderly metropolis by moving to its edge and borrowing some of its public monumentality."[22] This philosophy is seen in conjunction with the grander scale of the "City-Beautiful" Movement, which was heavily influential for the designers and urban planners of the late 19th century.

As a precursor for the success of Windrim's trio- stations, the Schuylkill Generating Station, constructed in both 1903 and later in 1914, was the first large-scale power plant in the greater Philadelphia area. It initiated the standard of being the "Workshop of the World," meaning it housed the strongest turbo-generators of its kind for its time.[23] This title called for an impressive status of Windrim's architectural repertoire along with the introduction of William C.L. Eglin's revolutionary engineering technologies.

William C.L. Eglin began his engineering career at Edison Electric Light Company of Philadelphia in 1889, (Figure 22). He became Philadelphia Electric Company's Chief Engineer in 1899. Like Windrim, the Schuylkill Generating Station was Eglin's first industrial sized power plant, where they were paired together as a team that incorporated the aesthetic of architecture with the science of engineering. Before dedicating himself solely to the Philadelphia Electric Company, Eglin was the National Electric Light Association President from 1908-1909 and became the Philadelphia Electric Company's Vice President that same year. Then from 1912 until his death in 1928, his career took him to the position as Philadelphia's Electric's Director.[24]

Eglin was considered one of the most progressive engineers of his time where he introduced the surface condenser, a revolutionary technology in steam efficiency and regenerative heat cycles. He also improved thermal efficiency and stated the importance in the role of auxiliary equipment in power stations.

Together, Windrim and Eglin found a mediator in art and science by successfully designing three stations of a similar architectural character, Chester Generating Station in 1916, Delaware in 1920, and Richmond in 1925. Satisfying Criterion E, Delaware Station "is the work of a designer, architect,

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[20] Wunsch, 74.
[21] "Classical Revival Style 1895-1900," Pennsylvania Historical & Museum Commission, http://www.phmc.state.pa.us/portal/communities/architecture/styles/classical-revival.html
[22] Wunsch, 39.
[23] Wunsch, 32.
[24] Wainwright, History of the Philadelphia Electric Company (1881-1961).

landscape architect or designer, or engineer whose work has significantly influenced the historical, architectural, economic, social, or cultural development of the City, Commonwealth or Nation."

Delaware Generating Station

The Delaware riverfront is unique in its initial settling of the colonists which is why it is still reputable in what we see today. Penn Treaty Park, which is adjacent to the Delaware Station, hosted the signing of the Penn Treaty in 1683 as an agreement between the Native Americans and William Penn. Today, this space is celebrated for its connection to history and recreational application.

As the demand for industry grew along the Delaware River, Delaware Avenue widened to 150 yards by 1900, where it became the widest as well as the longest riverside street of its time.[25] This not only benefitted the industry boom of the early twentieth century but also benefitted the high density traffic of today. Prior to Philadelphia Electric acquiring the site of the Delaware Station, a respectable United States Navy site called the Neafie & Levy Shipyard housed some of the largest and innovative ships that the world has ever seen, (Figure 23). Specializing in marine engineering, and one of the first of its kind, the first submarine named the U.S.S. Alligator was built in 1862 and the famous U.S.S. destroyer, the Bainbridge, was designed and built at this site in 1902.[26] Upon the closing of the Shipyard in 1907, there was great debate as to how the site should be used. Because it is located in an area that had a high water table and is susceptible to flooding, its proposed use was not exactly the most versatile. Therefore the Philadelphia Electric Company chose this site in 1913 as it had a convenient location along the Delaware River and the river water could be used in the water systems of the Power Plant.

While Schuylkill and Chester Stations were successful as individual power plants, the demand for electricity in the homes rose at an exponential rate during and post-World War I. Therefore, Philadelphia Electric planned to build on the land that remained vacated for four years. Planning for the new power plant began in September 1916.[27] Then in August 1917, Stone & Webster, a world-renowned contracting company, was hired to construct, purchase and install the equipment needed to build the second of the trio stations.[28] Construction began on September 25, 1917 but reluctantly paused in December 1917 to mitigate the costs from the war and acquire enough materials for construction, (Figure 24). After a two year hiatus, construction resumed on September 28, 1919. Delaware Generating Station was proposed to be open by November 1918 but was complete and ready for operation on October 31, 1920. Satisfying Criterion B, the building, "is associated with an event of importance to the history of the City, Commonwealth or Nation," where its contributions are applicable to the introduction and the rise in the nation's rapid demand for electricity.

Upon completion and beginning of operation, half the building was erected with only two generators functioning each at 30,000 kilowatts, (Figure 25). Just two years later, a third generator of the same capacity was installed as a result in the rise of Philadelphia Electric Company's success in the electricity market. Another year later, two more of the generators were installed totaling five out of the

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[25] Harry G. Kyriakodis, A History of Philadelphia's Lost Waterfront, (Charleston: History Press, 2011.) 135.

[26] W. N. Patten, "Construction Features of Delaware Waterside Power Station of the Philadelphia Electric Company," Stone and Webster, Vol 28, 1921.

[27] Wainwright, 110.

[28] F.S. Clark, "The Delaware Station of the Philadelphia Electric Company," Stone and Webster Vol. 26, 1920.

six seen in the Delaware Power Station. The final generator, with a slightly higher load of 33,000 kilowatts, was installed in 1924, seeking a total of 183,000 kilowatts of total power generated by the Philadelphia Electric Power Plant at a given period of time. This not only emphasizes Philadelphia Electric's height in the economy based on supply and demand but also its conscience upkeep and efficiency in the advancing engineering technologies.

In 1953, David Marano was designated as the architect for the expansion of the Power Plant. Due to the social era that the building on the east was being constructed, the location of the plant adjacent to the park, the Delaware River, and the overall surrounding context was a large concern for the environment. In response, the reheat cycle was further enforced as an effective, recyclable method of handling the coal dust. The addition consisted of two generators, each at 136,000 kilowatts, demonstrating the rise in electrical technology. Less men were needed to handle the generators; previously 146 men were needed to manage 195,000 kilowatts of power when only 24 more men were needed to power 272,000 kilowatts.[29] This increased the efficiency by a striking 17%.

The Delaware Generating Station continued to utilize coal to produce electricity until 1970. By this time the generators were emitting 325 tons of coal per hour. Later, the Station had converted to oil.[30] Once the merging of Exelon and Philadelphia Electric Company (PECO) occurred in 2000, the power plant had officially ended its operation in 2004, yet has remained largely mothballed. This is due to the fact that its generators were no longer needed as electricity became more efficient and outsourced over time. The 1953 expansion was demolished in 2008 due to asbestos remediation and demand for a parking lot to support an office building immediately adjacent to the site.[31]

Satisfying Criterion A, the Delaware Station, "has significant character, interest or value as part of the development, heritage or cultural characteristics of the City, Commonwealth or Nation or is associated with the life of a person significant in the past." John Windrim's architectural influence in the City of Philadelphia has been clearly demonstrated as the station still stands as a historical construct along the Delaware River. His architecture is viewed as monumental, alluding to the history of Philadelphia. Satisfying Criterion H, the Station is "owing to its unique location or singular physical characteristics, represents an established and familiar visual feature of the neighborhood, community or City." It holds the backdrop of Penn Treaty Park, is seen from across state lines and is one of the largest buildings in the Fishtown community. Lastly, it also satisfies Criterion J, where the Delaware Station "exemplifies the cultural, political, economic, social or historical heritage of the community." As it stands for nearly a century, the Delaware Power Station is an iconic architectural phenomenon of its time bringing together the sense of community heritage and the potential in economic development.

Conclusion

With a strong sense of community engagement and a rich cultural history, the site of the PECO Delaware Station would provide a sense of place for the rise in Philadelphia's electrical era as well as the beautiful homogenization of architecture and engineering of Philadelphia natives John T. Windrim and William Eglin. The unique design of Classical monumentality and industrial architecture empowers the distinctiveness of the Philadelphia Electric Company's Delaware station.

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[29] Wainwright, 313.
[30] Interview with Aaron Wunsch, in communication via email, December 2015.
[31] "Demolition at Delaware Power Plant," last modified August 21, 2008. http://planphilly.com/articles/2008/08/21/3714

The Delaware Generating Station satisfies the Designation Criteria, (A), (B), (D), (E), (H), (J) in regards to the Historical Commission's ordinance in Section 14-2007(5), of the Philadelphia Code.

Fulfilling Criteria A, Delaware Generating Station "has significant character, interest or value as part of the development, heritage or cultural characteristics of the City."

Criteria B, "is associated with an event of importance to the history of the City, Commonwealth or Nation," as an architectural icon in the Age of Electricity. Criteria D, "embodies distinguishing characteristics of an architectural style or engineering specimen," as a famous work of Classical Revival architecture.

Criteria E, "is the work of a designer, architect, landscape architect or designer, or engineer whose work has significantly influenced the City," the team work of Philadelphia based architect John T. Windrim and engineer William Eglin. Criteria H, "…represents an established and familiar visual feature of the neighborhood," as an exemplary large-scale power plant adjacent to the Delaware River waterfront.

Lastly, Criteria J, "exemplifies the cultural, political, economic, social or historical heritage of the community." Due to the satisfaction of these criterion, the Delaware Generating Station is representative of an iconic work of Philadelphia architecture and is therefore eligible for the Philadelphia Register of Historic Places, (Figure 26).

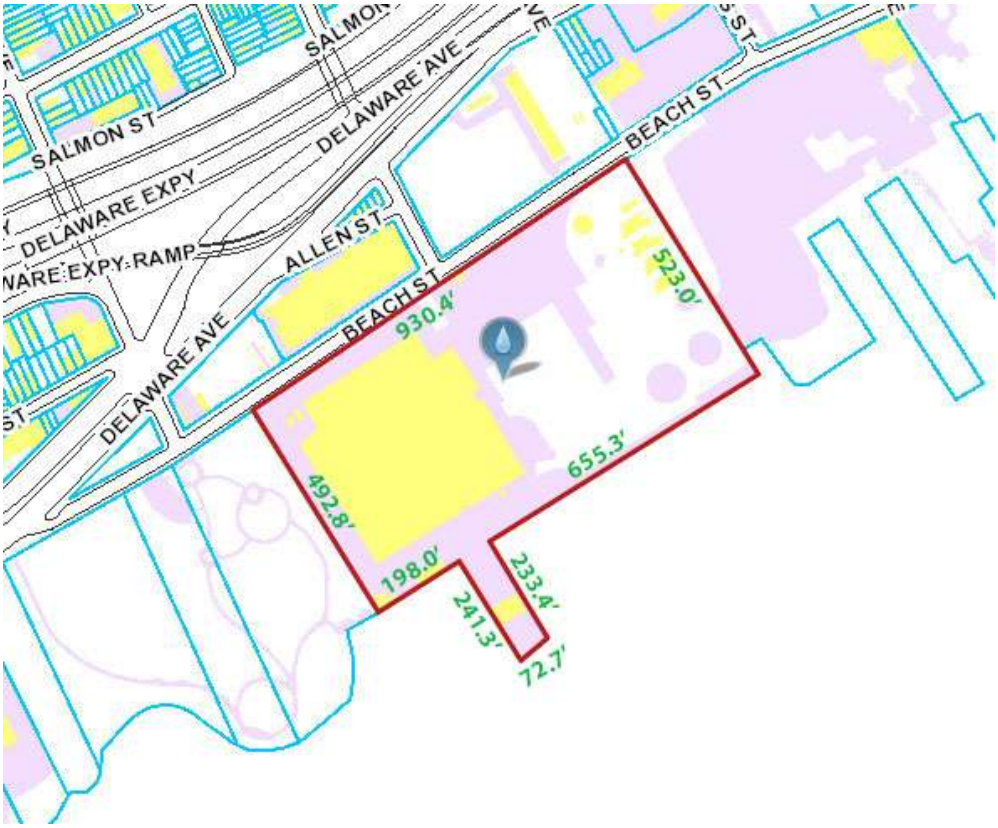


Fig 1: Site plan indicating boundaries, Underlay Map: *Philadelphia Water Department, 2015*

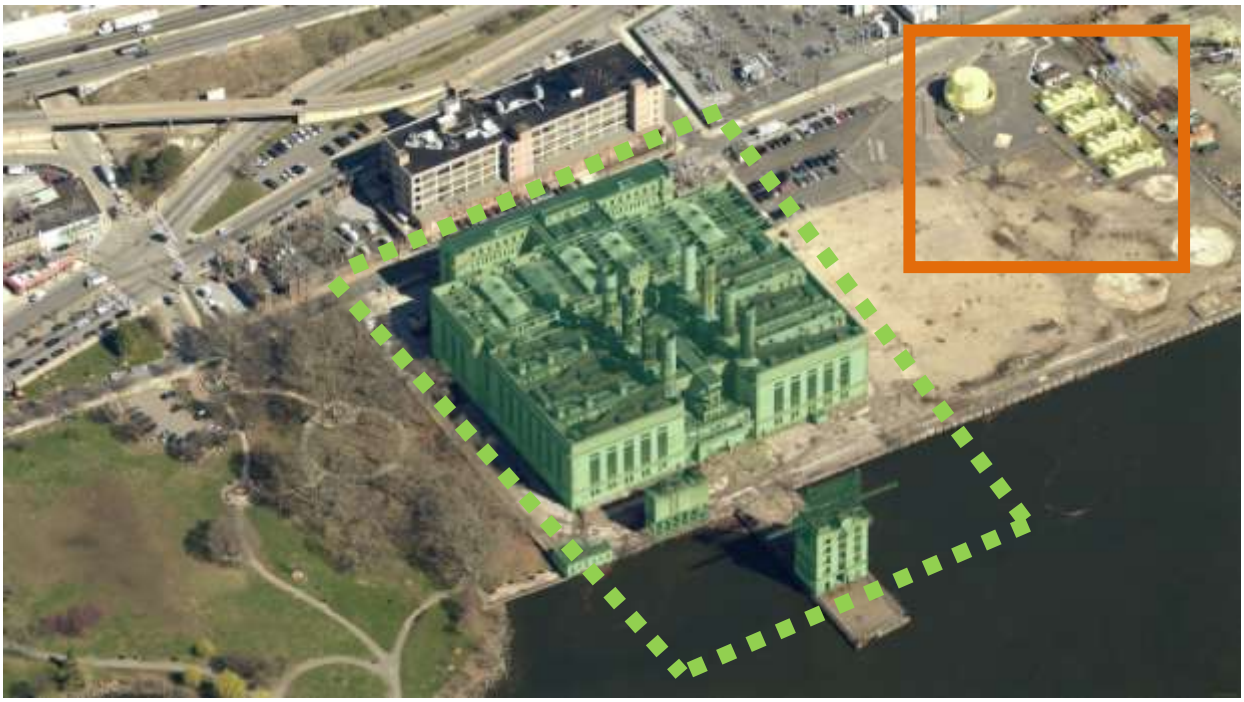


Fig 1A: Area of Designation- Green dotted: Main Parcel and Contributing Structures, Orange solid outline: Non-Contributing Structures, Underlay Photograph: *Pictometry, 2014*

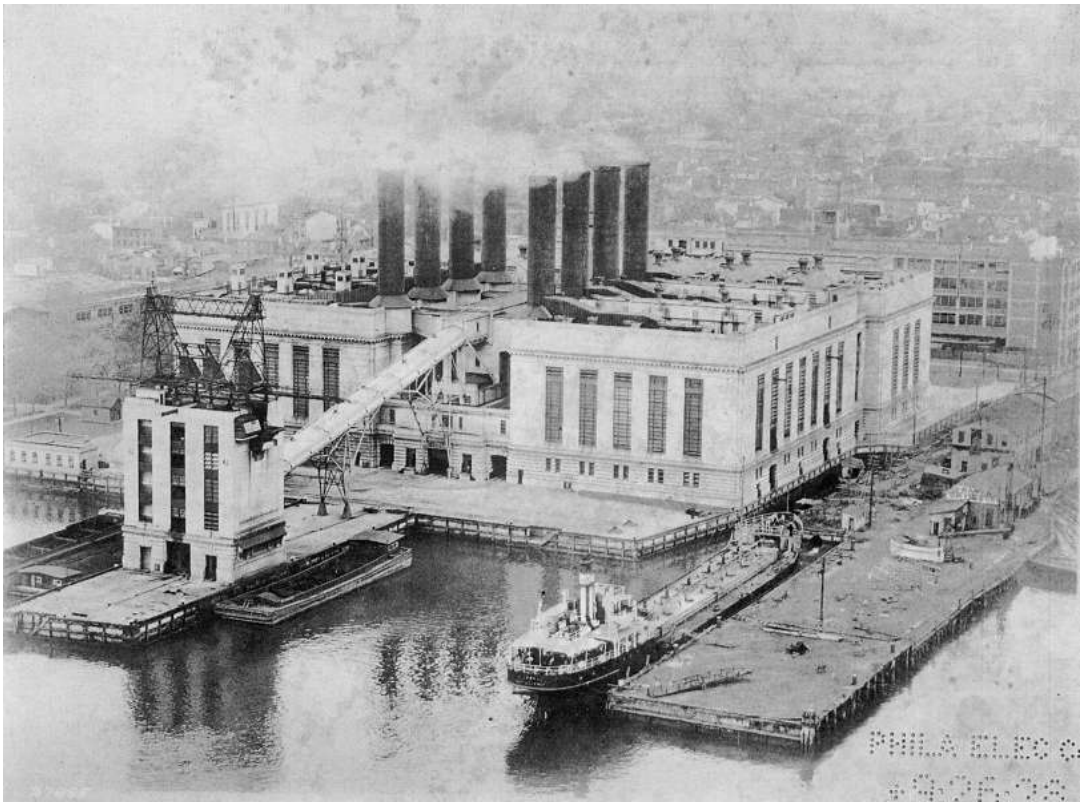
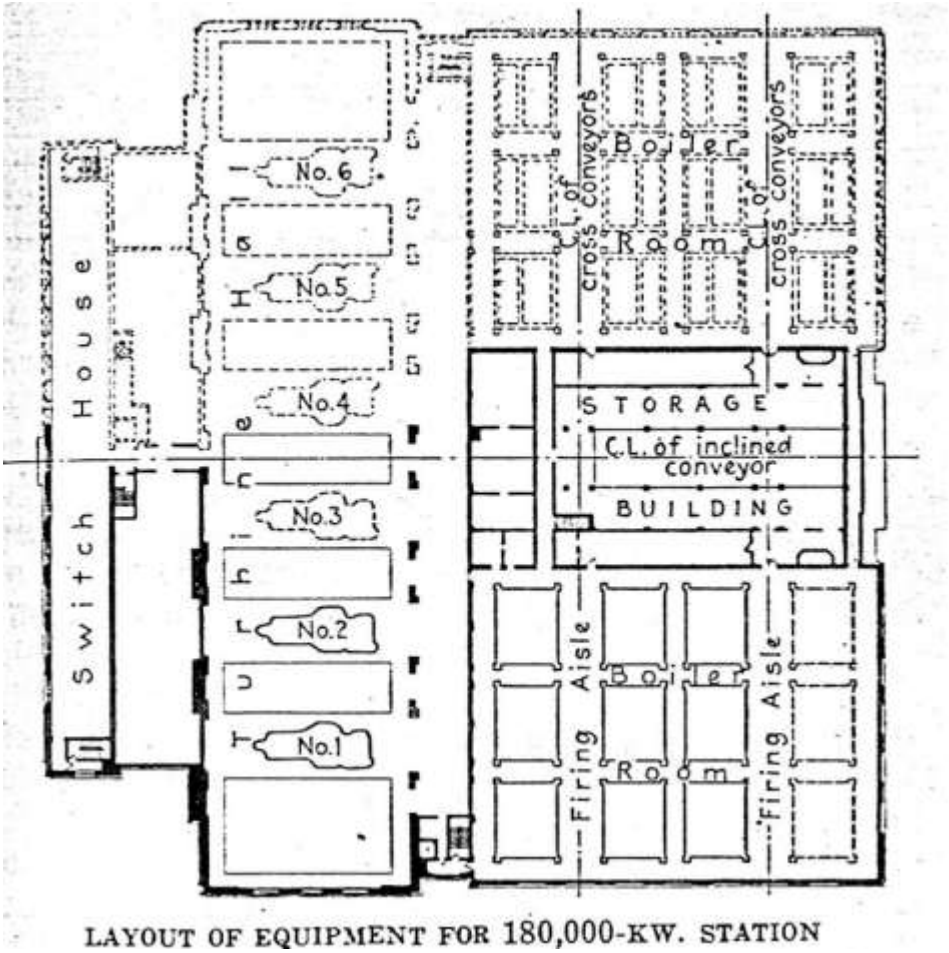


Fig 2: Southeast view of Delaware Generating Station, *Philadelphia Electric Company, 1928*

Fig 3: Map of Philadelphia, Pennsylvania, *Franklin Survey Co, 1946*

Fig 4: Location of Philadelphia Electric Company's Delaware Station (Site 36), *Franklin Survey Co, 1946*

Fig 5: Location of Philadelphia Electric Company's Delaware Station, *Bromley Philadelphia, 1922*



LAYOUT OF EQUIPMENT FOR 180,000-KW. STATION

Fig 6: Floor plan of Delaware Station, *Electrical World, 1921*

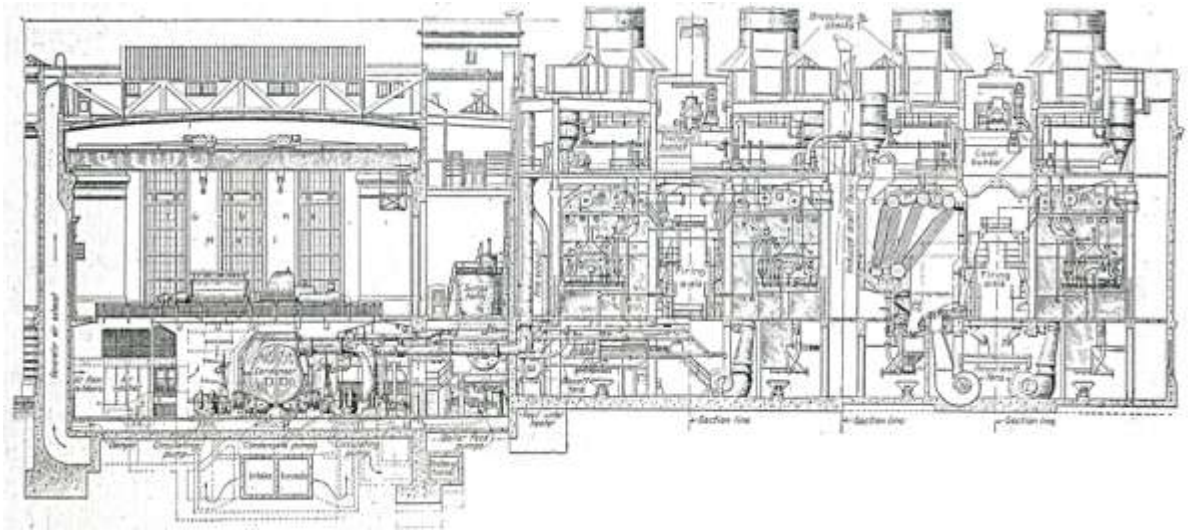


Fig 7: Cross Section of the Station, indicating location of auxiliary equipment, turbine hall and smoke stacks, *Electrical World, 1921*

Fig 8: East façade showing dentil cornice, *Stephanie Haller, 2015*

Fig 9: Smokestacks, rust and paint degradation, *Chandra Lampreich, 2014*

Fig 10: Aerial Photograph showing smokestacks, exhaust units and pilot houses on roof. Also showing the west façade, *Pictometry, 2014*

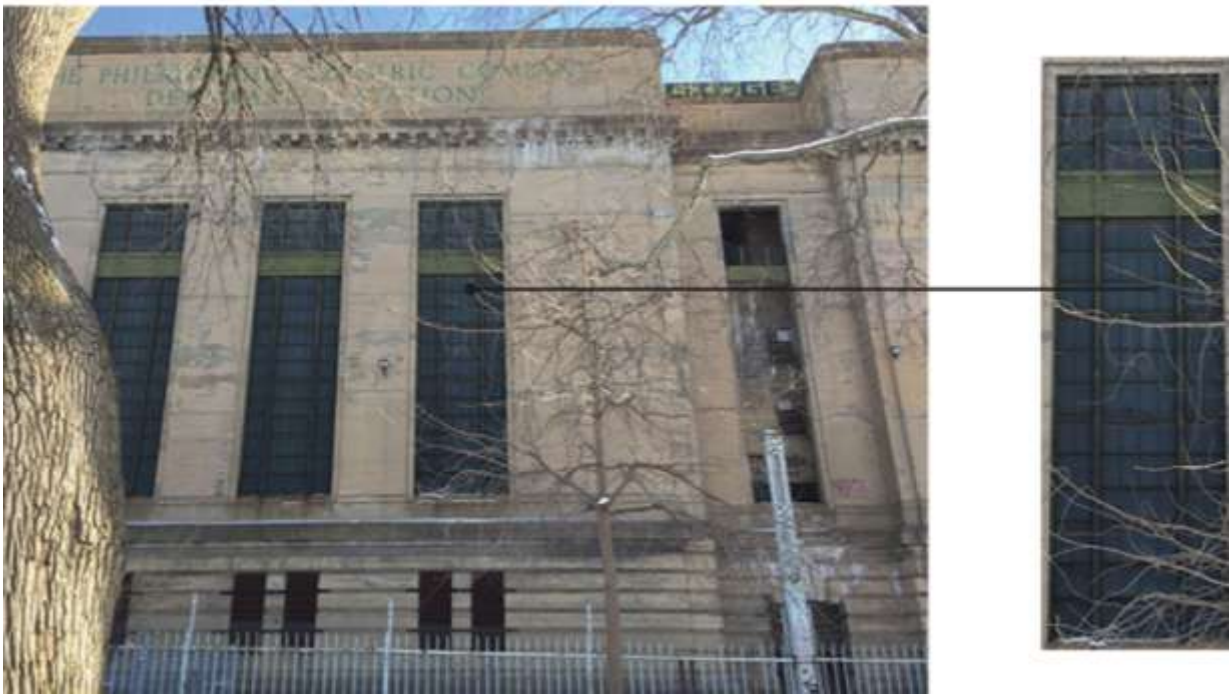


Fig 11: Industrial windows on the East façade, *Stephanie Haller, 2015*

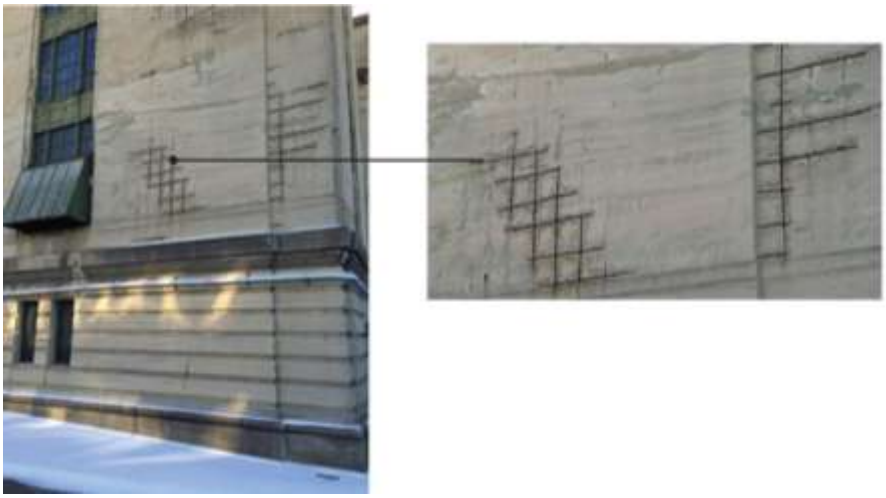


Fig 12: Exposed Rebar on the North façade, *Stephanie Haller, 2015*

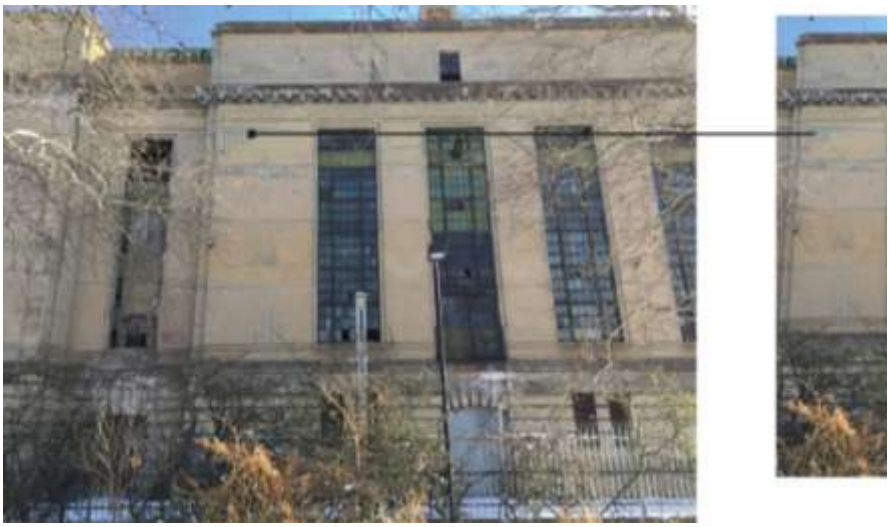


Fig 13: Discoloration on East façade, *Stephanie Haller, 2015*

Fig 14: Cracking of concrete on Southwest corner, *Stephanie Haller, 2015*

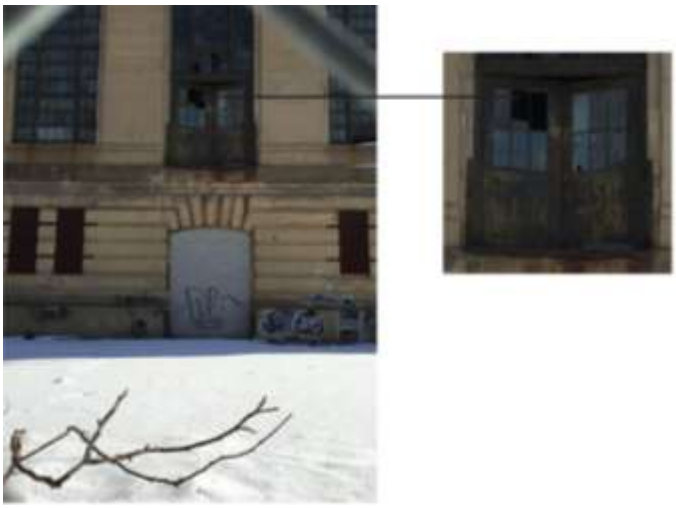


Fig 15: Shattering of glass in windows, *Stephanie Haller, 2015*

Fig 16: Aerial view facing front façade, *Pictometry, 2014*

Fig 17: Aerial View showing east and south façades, *Pictometry, 2014*

Fig 18: Render of Delaware Station, East facade, *Philadelphia Electric Company, 1923*

Figure 19: Aerial View facing south façade, *Pictometry, 2014*

Fig 20: South façade of Delaware Generating Station, *Philadelphia Electric Company, 1924*

Fig 21: Portrait of John T. Windrim, *Moses King*, c. 1901

Fig 22: Portrait of William Eglin, *History of the Philadelphia Electric Company, c. 1910*

Fig 23: Neafie & Levy Shipyard, *Independence Seaport Museum, 1893*

Fig 24: Construction photo of Delaware Station, *Philadelphia Electric Company, 1918*

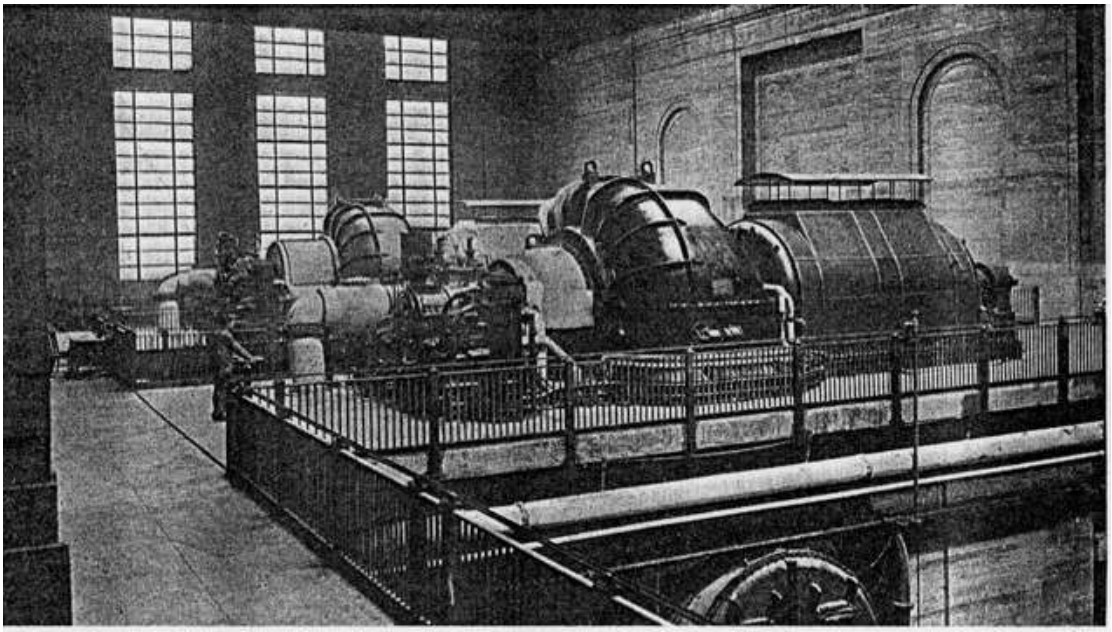


PLATE IV. TURBINE HALL AND UNITS NOS. 1 AND 2

Fig 25: Generators 1 and 2 of the Turbine Hall, *Stone & Webster, 1921*

Fig 26: View from the Southeast corner, adjacent to Penn Treaty Park, *Stephanie Haller 2015*

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9. Nominator

Name with Title: Research/Written by: Stephanie Haller, Facilitated by: Jill Betters
Email: snhaller@yahoo.com & jill.betters@yahoo.com
Organization: N/A
Date: 03/03/2015
Street Address:
Stephanie: 4722 Janet Lane, Bethlehem, PA 18017 (Permanent Address)
1229 N. 16th St, Apt 3, Philadelphia, PA 19121 (Address until June 30, 2016)
Jill: 872 Mercer Street, Philadelphia, PA 19125
Telephone: 484-274-3316 (Stephanie)
City, State, and Postal Code: Listed Above
Nominator(s) are not the property owners.