



August 29, 2024
Via Email and FedEx

Diana Chandler-Zimmermann, Zoning Board Secretary
Township of West Orange
Zoning Board of Adjustment
66 Main Street
West Orange, New Jersey 07052

**RE: PUBLIC SERVICE ELECTRIC AND GAS COMPANY (PSE&G)
WEST ORANGE SWITCHING STATION - 26KV LIFECYCLE PROJECT
APPLICATION NO. ZBA-24-06
325 MOUNT PLEASANT AVENUE - BLOCK 155, LOT 26.01
TOWNSHIP OF WEST ORANGE, ESSEX COUNTY, NEW JERSEY
SUPPLEMENTAL ENVIRONMENTAL INFORMATION**

Dear Ms. Chandler-Zimmerman:

Public Service Electric and Gas Company (PSE&G) is providing additional information to supplement our site plan/variance application (ZB-24-06) for the West Orange Switching Station (Station). In accordance with comments from the Zoning Board of Adjustment's members and the public on August 15, 2024, PSE&G is providing:

1. Six (6) copies of the Revised Landscaping Plan Set, including the following sheets:
 - a. Drawing No. TR-01, Tree Removal Plan, dated 12/22/2022, last revised 8/11/2024
 - b. Drawing No. TR-02, Tree Removal Notes & Details, dated 12/22/2022, last revised 8/11/2024
 - c. Drawing No. TR-03, Tree Removal Notes & Details, dated 12/22/2022
 - d. Drawing No. L-01, Landscape Plan, dated 12/22/2022, last revised 8/11/2024
 - e. Drawing No. L-02, Landscape Notes & Details, dated 12/22/2022, last revised 8/11/2024
2. Six (6) copies of the color Landscape Rendering, dated 12/22/2022, last revised 8/14/2024
3. Six (6) copies of an Environmental Impact Memorandum. In accordance with § 25-13.3b, an EIS is only required if the subject development is five (5) acres or more. Since the proposed 26 kV yard and fence replacement is only 3.92 acres, PSE&G had requested a waiver. Based on a discussion with Mr. Erik DeLine, with the Nishuane Group, LLC, on Tuesday, August 20, 2024, PSE&G agreed to provide additional information to supplement the application.

Applications for station upgrades have been routinely submitted to the Zoning Board of Adjustment of the Township of West Orange since at least 1988.

We believe there are only two (2) major environmental considerations in connection with PSE&G's current application: vegetation removal and stormwater management. Impacts to vegetation have been addressed in the enclosed revised Landscaping Plans and will be discussed in great detail by PSE&G's Landscape Architect, while impacts to stormwater are addressed in the Stormwater Management Report and will be addressed in great detail by PSE&G's Civil Engineer. The Station is generally sited on level portions of the property.

We look forward to continuing to present our proposal before the Zoning Board of Adjustment. Should you have any questions or require additional information, please contact me at (908) 907-0767 or by email at Noreen.Merainer@pseg.com.

Sincerely,

A handwritten signature in cursive script, appearing to read "Noreen Merainer".

Noreen Merainer, AICP, PP, PMP
PSE&G Licensing Project Manager

ENVIRONMENTAL IMPACT MEMORANDUM

***Submitted Pursuant to the Township of West Orange
§25-13-3(b)***

For:

**West Orange Switching Station
325 Mount Pleasant Avenue, Block 155, Lot 26.01
Township of West Orange, Somerset County**

Submitted to:

**ZONING BOARD OF ADJUSTMENT OF THE
TOWNSHIP OF WEST ORANGE**

Submitted by:

**PUBLIC SERVICE ELECTRIC AND GAS COMPANY
(PSE&G)
4000 HADLEY ROAD
SOUTH PLAINFIELD, NEW JERSEY 07080**

August 29, 2024

1.0 Project Description

Public Service Electric and Gas Company (PSE&G) is applying for Preliminary and Final Major Site Plan Approval in connection with upgrades to our West Orange Switching Station located at the above-referenced address. The improvements will bolster the existing 26kV system to increase reliability of service to customers within the Township of West Orange and surrounding municipalities in Essex County. The Switching Station directly connects to PSE&G facilities in Caldwell, Irvington, East Orange, and South Orange and is part of a larger electric grid. This upgrade is being referred to as the 26kV Lifecycle Project, where the intent is to remove and replace outdated 26kV equipment.

The Station has been owned and operated by PSE&G as a public utility use at this location for almost 100 years and will remain a public utility use following the completion of the proposed site improvements. The station will continue to be unmanned, with visits by approximately one (1) to two (2) maintenance vehicles biweekly. The existing station yard will remain relatively flat to accommodate the installation of the proposed 1-story 26kV switchgear, feeder reactors, 26kV bus supports, shallow slab and spread footing foundations to support the equipment, and new drive paths in the southeast corner. Additionally, PSE&G proposes six (6) 70-foot-tall lightning masts to protect the new equipment from lightning strikes. These improvements are similar in physical appearance to those which presently exist within the station. A linear stormwater bioretention basin system is proposed to be installed east of the 26kV yard and parallel with Prospect Avenue. Any trees cleared will be replaced with a suitable buffer along Mount Pleasant and Prospect Avenues. PSE&G also proposes to remove the antiquated perimeter wrought iron fence and replace it with a modern eight-foot (8') decorative Ameristar-brand fence along Mount Pleasant and Prospect Avenues, and a portion of the western Mount Pleasant Avenue access driveway.

2.0 Site Description and Inventory

2.1 Types of Soils

The 26 kV yard is located in a previously disturbed area. Soil inventory information can be found in the Stormwater Management Report; in Section 1.4, Soils, and in Appendix E, Subsurface Investigation.

2.2 Topography

Existing and proposed topographic conditions are shown on the Survey and Site Plan. Generally, the Station is sited on level portions of the property, which slopes downward from Prospect Avenue and partially upwards from Mount Pleasant Avenue.

2.3 Geology

According to NJ-GeoWeb, the Township is located within the Piedmont physiographic province of New Jersey, as shown on the New Jersey Geological Survey map. The underlying bedrock of the Piedmont province is sedimentary rocks of Triassic and Jurassic age (240 million to 140 million years) and igneous rocks of Jurassic age.

Locally, the NJ-GeoWeb Geology dataset shows that the site is underlain by fine- to medium-grained basalt comprising the Orange Mountain Basalt bedrock geologic formation (Jo). Superimposed on this bedrock foundation are deposits comprised of clayey silt to sandy silt with some to many pebbles and cobbles and few boulders comprising the Rahway Till surficial geologic formation (Qwtr). The site is also located within the mapped Scattered Bedrock Outcrop (sbo) geologic formation.

Depth to bedrock conditions are presented in the Subsurface Investigation Report, which can be found in Appendix E of the Stormwater Management Report submitted as part of the initial application.

2.4 Vegetation

The current land use for the site, according to the Land Use/Land Cover of New Jersey 2020 dataset is transportation/communication/utilities and other urban or built-up land. A small portion of the site along Prospect Avenue and Mount Pleasant Avenue is mapped as deciduous forest (10-50% crown closure).

The majority of the site has been previously developed with various utility uses; areas outside of the existing Station yards consist of maintained landscaping with grass and various tree species. A location map and full listing of all tree species inventoried on the site is provided on the Tree Removal Plan and Notes & Details sheets (TR-01 and -02). A subset of the surveyed trees were noted as in poor health and were subsequently removed to mitigate hazards. Additionally, the former West Orange Township Forester, Mr. Ron Farr, asked for dead ash trees to be removed in a communication to PSE&G dated December 29, 2021.

2.5 Surface Water

No natural surface water features, including waterbodies (streams or lakes) or wetlands are present on the site. Additionally, no floodplain areas are present on the site, as explained in the Stormwater Management Report submitted as part of the initial application.

Drainage patterns, including existing surface runoff conditions and proposed conditions, are also presented in the Stormwater Management Report.

2.6 Subsurface Water

Appendix E of the Stormwater Management Report, Subsurface Investigation Report, documents subsurface water conditions. Groundwater seepage was encountered at depths ranging from approximately 4 to 9 feet and is estimated to be about 10 feet below grade.

2.7 Unique, Scenic and/or Historic Features

The Station is a man-made feature and, to PSE&G's knowledge, is not included on the New Jersey or National Historic Register for Essex County.

2.8 Existing Development Features

PSE&G's West Orange Switching Station is the predominant feature present on the site. The Station consists of several buildings: a multi-story brick building, a one-story control house, and two (2) additional smaller-footprint single-story buildings. The station yards are surfaced with three-quarter inch ($\frac{3}{4}$ ") crushed stone and comprises of various spread concrete pad foundations which support outdoor electrical process equipment. The 230kV electrical equipment is secured by an internal eight foot (8') high chain-link fence. There are two (2) access driveways which exist along Mount Pleasant Avenue and one (1) access driveway along Prospect Avenue.

A six foot (6') high brick and mortar pillar and wrought iron fence secures the remaining property along Mount Pleasant and Prospect Avenues.

PSE&G cannot maintain the fence due to its age and type of construction. Repairing old-fashioned wrought iron fencing is laborious, time-consuming, and costly. The fence is rusting and in disrepair and does not meet current safety standards. Photos of the fence, taken on August 28, 2024 by Project Manager Miguel Briones, are attached. The deteriorating condition of the fence was noted in a customer complaint on July 12, 2022.

According to PSE&G's files, the condition of the fence was a recurring issue in Zoning Board of Adjustment site plan/variance applications in 1992, 1997 and 2007. The Board required

brick pillars to be replaced periodically. The fence, which was originally sky blue, was repainted black in approximately 2007 as a requirement of site plan/variance approval. Photos of the fence in 2007 prior to the repainting are included as an addendum to this memo.

Most importantly, the existing fence does not comply with electric utility industry standards for protection of substations and must be replaced. The existing fence does not meet the National Electric Safety Standards, which require 7-foot-high fencing, and does not meet PSE&G's internal safety standards of 8-foot-high fencing. PSE&G has been upgrading fencing at all of our facilities for security and protection.

Additional man-made features include PSE&G's Marion Drive Substation and West Orange – Roseland Transmission Right-of-Way (ROW), consisting of monopole towers and overhead wires that traverses the linear portion of the site parcel to the northwest.

2.9 Miscellaneous

Present and proposed noise levels are presented in the Acoustical Evaluation of Station Upgrades, transmitted to the Board on July 3, 2024.

3.0 Area and Regional Description

The entire property falls within a total of three (3) zones: the O-R Office Research District encompasses the station yard and a portion of the transmission ROW, whereas further to the northwest the linear portion of the transmission line continues off-site through the adjoining Planned Unit Residential Development (PURD) Zone and R-5 Single Family Residential Zone. The project presented in our current application falls entirely in the Office Research (O-R) District.

The Station is bound by office and retail businesses to the north, Mount Pleasant Avenue and a golf course to the south, Prospect Avenue, and commercial businesses, telecommunications and radio facilities to the east and office and medical facilities to the west.

4.0 Impact

4.1 Soil erosion and sedimentation resulting from surface runoff

A soil erosion and sediment control plan has been submitted to the Hudson Essex Passaic Soil Conservation District. Work will not commence without the implementation of the approved plan to control soil erosion and sedimentation.

4.2 Flooding and floodplain disruption

The Station is not located in a floodplain area. No impacts to flooding or floodplain disruption are anticipated.

4.3 Degradation of surface water quality

No surface water bodies are present at the Station. Additionally, a soil erosion and sediment control plan will be implemented during construction, and therefore no degradation of water quality is anticipated.

4.4 Groundwater pollution

Any electric equipment that contains insulating oil is equipped with oil containment systems. The Station has a spill prevention and countermeasure plan to prevent any groundwater pollution.

4.5 Sewage disposal

There is no proposed increase in the number of bathrooms/toilets present on site. There are existing bathrooms in the control house. The 26kV yard will continue to be unmanned, with visits by approximately one (1) to two (2) maintenance vehicles biweekly. Therefore, no impacts on sewage disposal will occur as a result of the proposed project.

4.6 Solid waste disposal

During construction, solid waste and construction debris will be managed in accordance with USEPA and NJDEP requirements. There will be no increase in solid waste disposal during the operation of the proposed 26kV yard.

4.7 Destruction of vegetation

Upgrades to the station and replacement of the existing fence will result in the removal of 136 viable trees and 14 non-viable trees. PSE&G had originally proposed the replacement of 170 trees, which exceeded the required 167 trees required to be replaced in conformance with the tree ordinance that was in effect at the time of submission (May 15, 2024) and which governs PSE&G's current application. As an updated ordinance was subsequently adopted as of June 10, 2024, the Landscaping Plan has been voluntarily updated to increase the total number of replacement trees to 317, 34 trees short of the required 351 trees. PSE&G will contribute to a Township Tree Fund for the remaining 34 trees. Tree plantings have been maximized given the amount of space available on the site, and PSE&G proposes to work with the Town Forester for additional considerations as a condition for approval.

New plantings, including tree replacements and other landscaping, will include evergreen tree species selected to provide year-round screening and texture and deciduous and ornamental tree species to supplement the existing deciduous tree cover.

The proposed stormwater basins, required in accordance with N.J.A.C. 7:8, will be vegetated with a low maintenance retention basin seed mix, including pollinator friendly species and shrub species to provide basin structure. Therefore, PSE&G complies with the recently-enacted tree ordinance.

4.8 Disruption of wildlife habitats

A review of the NJ-GeoWeb Landscape Project 3.3 dataset suggests that the site does not contain any known presence of threatened or endangered species or their habitat.

The vegetated areas are anticipated to provide habitat for certain common wildlife species that are well adapted to disturbed and suburban environments. White-tailed deer (*Odocoileus virginianus*), Eastern gray squirrel (*Sciurus carolinensis*), groundhogs (*Marmota monax*), various songbirds, and other suburban-adapted species may be seasonally present on the site and may experience temporary displacement to nearby suburban areas during construction activities.

Following construction and during the operational phase of the station yard, the vegetated portions of the site and newly landscaped areas, including the vegetated stormwater retention basins, will continue to provide habitat for common wildlife species that are adapted to human disturbance.

4.9 Destruction of scenic and historic features

The Station is a man-made feature and is not included on the New Jersey or National Historic Register for Essex County. The condition of the existing Station fence was an issue in Zoning Board of Adjustment site plan/variance applications in 1992, 1997 and 2007. The deteriorating condition of the fence was noted in a customer complaint on July 12, 2022.

4.10 Air quality degradation

As the Station does not generate electricity, there will be no impact on air quality during its operation. During the construction phase, emissions will occur from construction equipment and trucks hauling materials and equipment. Operators will be directed to turn off motors while the vehicles and equipment are not in use.

4.11 Noise levels

An Acoustical Evaluation of Station Upgrades was provided on July 3, 2024 as evidence that all operations will comply with the Township's noise regulations. No impacts to noise levels are anticipated.

4.12 Energy utilization

The proposed upgrades to the Station will enhance the capability of PSE&G to continue to provide essential electricity and meet the needs of the Township of West Orange, therefore resulting in a positive impact to energy utilization.

4.13 Neighborhood deterioration

The proposed project will not result in deterioration of the neighborhood. No land uses are changing, and the Station has been a long-term feature in the neighborhood.

4.14 Effect on public services, such as schools, fire, police

The proposed project will not result in impacts to public services. The Station has been owned and operated by PSE&G as a public utility use at this location for almost 100 years and will remain a public utility use following the completion of the proposed site improvements.

4.15 Traffic congestion

No impacts on traffic are anticipated. The yard is unmanned, and under normal operating conditions, one or two technicians visit the yard in a minivan or light duty truck weekly or biweekly.

Three (3) entrances to the Station are controlled by card readers to restrict access. There are two (2) entrances on Mount Pleasant Avenue (south and southwest corner) and one (1) entrance on Prospect Avenue (northeast corner). One of the driveways along Mount Pleasant Avenue enters the Station on a diagonal path. It is very difficult for any vehicles coming from the west to turn into the Station. The driveway will be reconfigured to a perpendicular entrance to provide ease of access. The access gate and card reader will be set back from Mount Pleasant Avenue to allow vehicles to pull entirely off the adjacent roadway prior to opening the gate. Upon completion of construction, the yard will continue to operate under these conditions and will not result in an increase in traffic congestion.

4.16 Health, safety and welfare of existing residents

The proposed project will not result in any negative impacts to the health, safety, and welfare of existing residents. The upgrades to the 26 kV yard will enhance the capability of PSE&G to

continue to provide essential electricity and meet the needs of the Township of West Orange and the surrounding area, resulting in a positive impact on the health, safety, and welfare of existing residents.

4.17 Regional development policies

The upgrades to the 26 kV yard will enhance the capability of PSE&G to continue to provide essential electricity and meet the current and future needs of the Township of West Orange and the surrounding area.

5.0 Recommendation to Mitigate Adverse Environmental Impact

5.1 Drainage plans which shall include, but not be limited to, soil erosion and sedimentation controls. Every effort should be made to limit off-site runoff to predevelopment levels.

Drainage patterns, including existing surface runoff conditions and proposed conditions, are presented in the Stormwater Management Report. A soil erosion and sediment control plan has been submitted to the Hudson Essex Passaic Soil Conservation District. Work will not commence without the implementation of the approved plan to control soil erosion and sedimentation.

5.2 Sewage disposal techniques.

There is no proposed increase in the number of bathrooms/toilets present on site. There are existing bathrooms in the control house. The 26kV yard will continue to be unmanned, with visits by approximately one (1) to two (2) maintenance vehicles biweekly. Therefore, no impacts on sewage disposal will occur as a result of the proposed project.

5.3 Water supply and water conservation proposals.

There is no proposed impacts to water supply. No increase in the number of bathrooms or sinks are present on the site. No new water connections are proposed as part of this project.

5.4 Site design techniques sensitive to the natural environment which should include innovative landscape, building and circulation design.

Landscape plantings have been selected to provide year-round screening and texture and supplement the existing deciduous tree cover. Native street tree species are proposed. Bioretention basin plantings include low maintenance bioretention basin seed mix with pollinator-friendly species.

5.5 Energy conservation measures

During the construction phase, operators will be directed to turn off motors while the vehicles and equipment are not in use to mitigate energy use.

5.6 Noise reduction techniques

An Acoustical Evaluation of Station Upgrades was provided on July 3, 2024 as evidence that all operations will comply with the Township's noise regulations. No impacts to noise levels are anticipated. During the construction phase, equipment operators will be directed to turn off motors while the vehicles and equipment are not in use.

5.7 Construction schedule

The construction schedule is provided on the Soil Erosion and Sediment Control plans.

5.8 Miscellaneous on-site and off-site public improvements

The proposed project consists of upgrades to an existing electrical station. The perimeter fence along Prospect and Mount Pleasant Avenues has been selected to conform with PSE&G's security standards and from an aesthetics standpoint. No on- or off-site public improvements are proposed.

6.0 Alternatives

The project includes upgrades to an existing electrical switching station. The No Project Alternative retains the property in the current condition at this time, which is an active electrical utility switching station with antiquated 26kV infrastructure and a perimeter fence in an unrepairable deteriorating condition. The perimeter fence does not comply with industry and PSE&G standards for safety and security.

The No Project Alternative will avoid the removal of trees on the site. However, the benefits enumerated previously in this memo, including the enhancement of the capability of PSE&G to continue to provide essential electricity and meet the needs of the Township of West Orange, and upgrading the fence to meet the National Electric Safety Standards and PSE&G's internal security standards, would not be realized by the residents of the Township of West Orange.

No alternative locations were considered as the project is at an existing station. The siting of upgraded equipment was informed by proximity to other existing equipment and yards.

7.0 Licenses, Permits and Other Approvals Required by Law

State of New Jersey Approvals

- New Jersey Department of Transportation Minor Access Permit (to be submitted)
- New Jersey Department of Environmental Protection Bureau of Water Allocation (BWA)

Essex County Approvals

- Essex County Site Plan (pending)
- Hudson Essex Passaic Soil Conservation District Plan Certification (pending)

Township of West Orange Approvals

- Preliminary and Final Site Plan Approval (this application)
- Tree Removal Permit (pending)
- Construction Permits (to be submitted)

Addendum – Photos of Fence from 2007



View of fence along Mount Pleasant Avenue in 2007.



View of fence along Mount Pleasant Avenue in 2007.



View of fence along Mount Pleasant Avenue in 2007.

Addendum – Photos of Fence from 2024



View of station from intersection of Prospect Avenue and Marcella Avenue, taken August 28, 2024.



View of station fence along Prospect Avenue, taken August 28, 2024, showing rusting fence sections. PSE&G's microwave/radio tower is shown on the right side behind the trees.



View of station fence along Prospect Avenue, taken August 28, 2024, showing rusting fence sections. A lightning mast is shown behind the trees.



View of fence along Mount Pleasant Avenue, taken August 28, 2024. The entrance to the Station will be reconfigured. Communications/radio facilities are located on the east side of Prospect Avenue.



View of station fence and existing guard shack (to be demolished), taken August 28, 2024, showing the condition of existing brick pillars.



View of station fence along Prospect Avenue, taken August 28, 2024, showing rusting fence sections and deteriorating brick pillars.



View of station fence along Prospect Avenue, taken August 28, 2024, showing rusting fence sections and deteriorating brick pillars.



View of station fence on Mount Pleasant Avenue at the intersection of Mount Pleasant Avenue and Prospect Avenue, taken August 28, 2024, showing rusting fence sections and deteriorating brick pillars.



View of station fence along Prospect Avenue, taken August 28, 2024, showing rusting fence sections and deteriorating brick pillars, with a lightning mast in the background.



View of station fence along Mount Pleasant Avenue look west, taken August 28, 2024, showing rusting fence sections.