



An Exelon Company

Legal Department
2301 Market Street / S23-1
P.O. Box 8699
Philadelphia, PA 19101-8699

Direct Dial: 215-841-6863

September 23, 2015

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, Second Floor
Harrisburg, PA 17120

**RE: Letter of Notification of PECO Energy Company for Reconfiguration of a
Segment of PECO's 220-24 230 Kv Transmission Line in Peach Bottom
Township, York County, Pennsylvania
Docket No. A-2015-2496406**

Dear Ms. Chiavetta:

Enclosed for filing with the Commission is *PECO's Response to Staff Data Requests* with regard to the matter referenced above.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Ward Smith".

Ward Smith
Counsel for PECO Energy Company

WS/ab

PECO Energy Company
Letter of Notification for Peach Bottom Transmission Reconfiguration
Docket No. A-2015-2496406
PECO Energy Company's Response to Staff Data Requests

Data Request 1. Please provide an engineering assessment of the project including information to address the following:

- a) Provide an analysis of minimum conductor clearances and conductor thermal ratings.
- b) Provide engineering design criteria and parameters such as vertical clearance to ground.
- c) Provide a demonstration detailing how the project will be in compliance with the current NESC including information such as how the ROW will be adequate with NESC requirements.
- d) Please provide information describing how PECO's design specifications and safety rules meet or surpass the requirements specified by the NESC for transmission lines.

PECO Response to Data Request 1: Please provide an engineering assessment of the project including information to address the following:

The 220-34 line is an existing transmission line constructed in 1967 operated at 230 kV. The line is 33.46 miles long. The line consists of overhead aerial construction from PECO's Newlinville substation in Coatesville to the terminal yard adjacent to the Peach Bottom Atomic Plant in Peach Bottom Township. The existing line changes from overhead conductor to underground cable from the terminal yard to Peach Bottom North substation for 0.33 mi. The terminal yard, substation, existing underground line and the proposed overhead line section are all located on existing Exelon/PECO property. The proposed construction is to replace the 0.33 miles of underground cable with overhead conductor.

- a) Provide an analysis of minimum conductor clearances and conductor thermal ratings.

Conductor clearances for the project meet or exceed the requirement of PECO's Engineering Practice EPP-2090 OHT Design Clearances. The clearance requirement in EPP-2090 exceeds the requirements of NESC-2012. Further discussion of PECO clearance requirements are provided in PECO's Response to Data Requests 1 (b), (c), and (d).

The rating of the conductor segment is:

- Summer Normal = 3821 amps
- Summer Emergency = 4437 amps

The thermal ratings were determined as follows: The proposed new conductor will be 959.6 kcmil 22/7 Type 13 ACSS/TW "Suwannee" conductor. Two (2) conductors will be used per phase. The PECO rating methodology AM-PE-4022_R0001 and associated PJM Bare Overhead Conductor Rating-2010 are based on the methodology of the "IEEE-738 Standard for Calculating the Current Temperature Relationship of Bare Overhead Conductors" with the following input parameters:

	<u>Normal Rating</u>	<u>Emergency Rating</u>
Wind speed (fps)	0	2.53
Wind angle	90	90
Latitude	40	40
Amb Temp (Sum/Wint)	35/10	35/10
Elev above sea level (ft)	200	20
Atmosphere	Industrial	Industrial
Sun Time (date@time)	6/10@14:00	6/10@14:00
Emissivity	0.7	0.7
Absorptivity	0.9	0.9
ACSR (Allow. conductor temp)	140 C	140 C

- b) Provide engineering design criteria and parameters such as vertical clearance to ground.

NESC Section 232 requires the following vertical clearances for 230 kV facilities:

Ground, Farmland --	22'4"
Roadways, Driveways, Parking Lots --	22'4"
Railroads, above top of rail --	30'4"
Areas not accessible by vehicles --	18'4"

For new construction such as this project, PECO designs the facilities to meet the NESC guidelines, plus a minimum of an additional 3 feet of additional vertical clearance. Similarly, for NESC horizontal clearances, PECO adds a minimum of an additional 2 feet of horizontal clearance for new construction.

- c) Provide a demonstration detailing how the project will be in compliance with the current NESC including information such as how the ROW will be adequate with NESC requirements.

The ROW width for the proposed project is governed by the conductor displacement due to wind with the assumption that buildings can be erected on the property line regardless of local municipality building setback requirements. A ROW width of a minimum of 150' is provided for the proposed new overhead line segment where both circuits are supported on a dual circuit structures. At the tie-in location the circuits split and are supported on independent structures. The ROW expands to 224' at the 220-39 tie-in location and 223' at the substation tie-in. This exceeds the requirements of the NESC and PECO's Engineering Practice EPP-2090 "OHT Design Clearances" and will provide access for line maintenance, repair and vegetation management.

- d) Please provide information describing how PECO's design specifications and safety rules meet or surpass the requirements specified by the NESC for transmission lines.

Per PECO's Engineering Practice EPP-2090 OHT Design Clearances, Section 6.2, all new transmission line designs require an additional PECO safety clearance margin to be added to the NESC clearance requirements. The margins are:

3'-0" for vertical clearances
2'0" for horizontal clearances

For lines 230 kV and above PECO adds the following robust design criteria requirements above NESC requirements per PECO's Engineering Practice EPP-2030 OHT Weather and Design Conditions :

- Heavy Ice and Wind Loading Condition – Line voltage 230kV and greater. Wind pressure applied to the iced conductors shall be 8psf with 1.00 inch radial ice and temperature of 0_F. Load factor is 1.25.
- Extreme Wind Loading Condition . Line voltage 230kV and greater. Wind pressure applied to the wires shall be 25psf. The ambient temperature is to be 60_F. The wind pressure applied to the structure shall be 31.25psf. Load factor is 1.00.
- Heavy Ice Loading Condition . Line voltage 230kV and greater. Radial ice thickness on the wires only is to be 1.50 in. No wind pressure. Temperature is 32_F. Load factor is 1.00.

PECO Energy Company
Letter of Notification for Peach Bottom Transmission Reconfiguration
Docket No. A-2015-2496406
PECO Energy Company's Response to Staff Data Requests

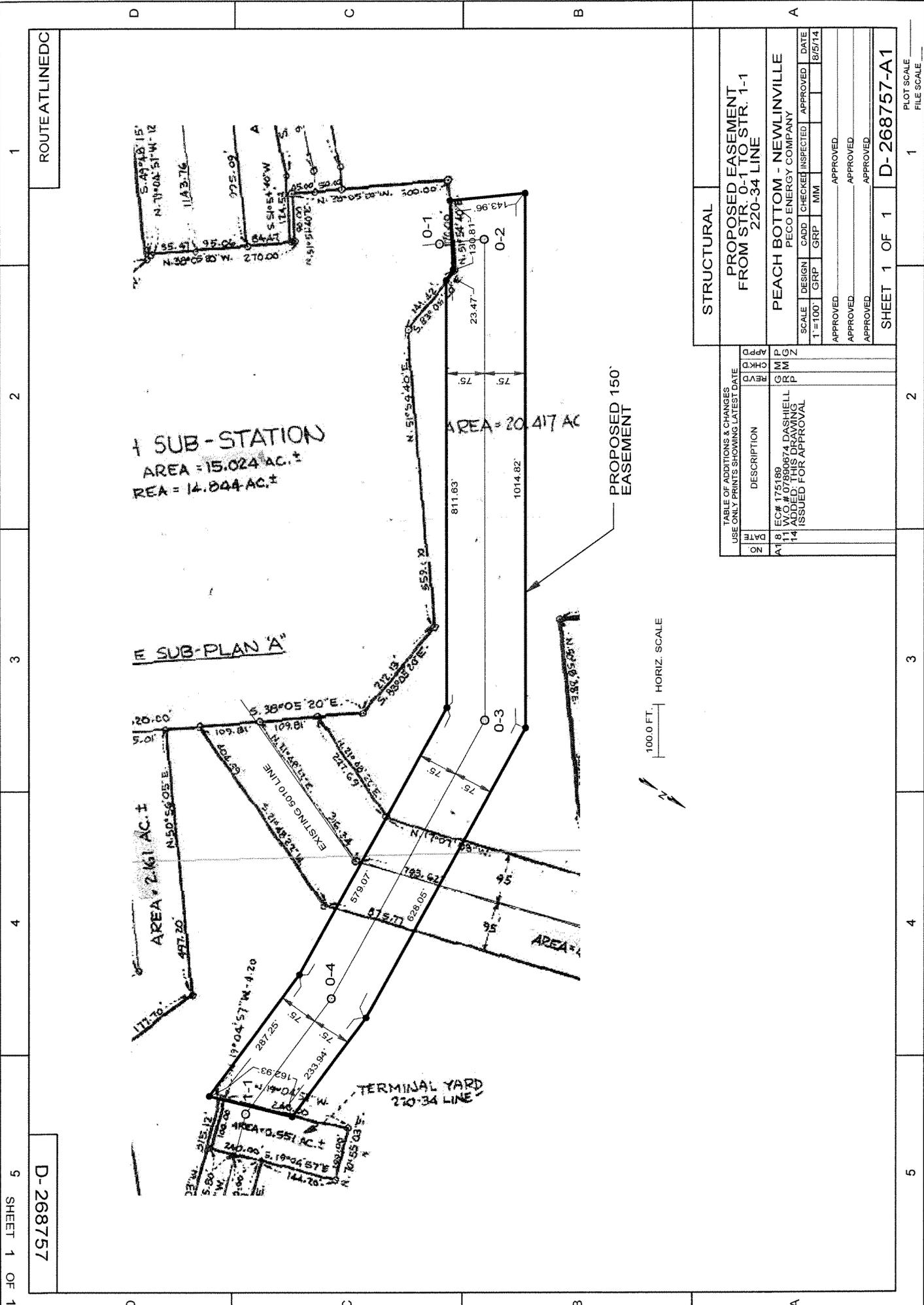
Data Request 2: What is the height of the existing poles near the new poles or structures that will be installed? Provide the location and footprint of the proposed structures.

PECO Response to Data Request 2:

The proposed 220-34 line section will cross under PECO's 5010 line between structures 0-2 and 1-1 on the 5010 line. Structure 0-2 is a lattice tower structure 110' tall and is located in the vicinity to the proposed construction. Structure 1-1 is a lattice tower 120' tall. The new 220-34 structures will be located at the following coordinates:

	<u>(X) Easting (ft)</u>	<u>(Y) Northing (ft)</u>	<u>Foundation Footprint</u>
Structure 0-4	2382999.26	160048.66	2x 7' dmtr foundation spaced 24' apart
Structure 0-3	2382397.23	160005.68	2x 8' dmtr foundation spaced 24' apart
Structure 0-2	2381631.70	159508.69	Single 11' dmtr foundation
Structure 0-1	Inside PECO Peach Bottom Substation		2x 6' dmtr foundation spaced 44' apart

Please also See Attachment DR2, Easement Plan, which shows the location of the proposed towers. Attachment DR2 is a PDF that is more easily readable in expanded form; an expandable electronic copy is thus being provided to Staff by separate email.



STRUCTURAL		PROPOSED EASEMENT FROM STR. 0-1 TO STR. 1-1 220-34 LINE	
PEACH BOTTOM - NEWLINVILLE		PECO ENERGY COMPANY	
SCALE	DESIGN	CADD	CHECKED
1" = 100'	GRP	MM	MM
APPROVED	APPROVED	APPROVED	APPROVED
DATE	DATE	DATE	DATE
8/5/14	8/5/14	8/5/14	8/5/14

TABLE OF ADDITIONS & CHANGES USE ONLY PRINTS SHOWING LATEST DATE			
NO	DATE	DESCRIPTION	REV'D
A18	8/11/14	EC# 175189	G M P
A11	8/11/14	W.O.# 07890874 DASHIELL	G M P
A14	8/11/14	ADDED THIS DRAWING	G M P
		ISSUED FOR APPROVAL	G M P

SHEET 1 OF 1	D-268757-A1	1	PLOT SCALE
		2	FILE SCALE

PECO Energy Company
Letter of Notification for Peach Bottom Transmission Reconfiguration
Docket No. A-2015-2496406
PECO Energy Company's Response to Staff Data Requests

Data Request 3: Please provide a copy of any comments received from state or local officials.

PECO Response to Data Request 3:

As part of its public outreach for this project, PECO had discussions with Peach Bottom Township. In addition, copies of the Letter of Notification were served on the relevant governing agencies of that municipality. No comments have been received.

PECO also served copies of the Letter of Notification on the Pennsylvania Department of Transportation, the Pennsylvania Department of Environmental Regulation, and the Historical and Museum Commission. Comments were received from the Historical and Museum Commission; a copy of those comments is attached. No other comments were received.



Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120-0093
www.phmc.state.pa.us

September 1, 2015

Ward L. Smith
PECO Energy Company
2301 Market Street/S23-1
Philadelphia, PA 19103

TO EXPEDITE REVIEW USE
BHP REFERENCE NUMBER

Re: File No. ER 2015-1623-133-A
PUC Letter of Notification of PECO Energy
Company: Reconfiguration of Segment of 220-
24 230 kV Transmission Line, Peach Bottom
Twp., York Co.

Dear Mr. Smith:

Thank you for submitting information concerning the above referenced project. The Bureau for Historic Preservation (the State Historic Preservation Office) reviews projects in accordance with state and federal laws. Section 106 of the National Historic Preservation Act of 1966, and the implementing regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation, is the primary federal legislation. The Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 et seq. (1988) is the primary state legislation. These laws include consideration of the project's potential effects on both historic and archaeological resources.

Based on our survey files, which include both archaeological sites and standing structures, there are no National Register eligible or listed historic or archaeological properties in the area of this proposed project.

Therefore, your responsibility for consultation for this project is complete. However, should you encounter archaeological resources during construction, please notify the Bureau for Historic Preservation at (717) 783-8946.

Sincerely,

Douglas C. McLearn, Chief
Division of Archaeology &
Protection

DCM/tmw

PECO Energy Company
Letter of Notification for Peach Bottom Transmission Reconfiguration
Docket No. A-2015-2496406
PECO Energy Company's Response to Staff Data Requests

Data Request 4: Please serve a copy of the application on the York County Planning Commission, and York County Commissioners, and Peach Bottom Township Planning Committee.

PECO Response to Data Request 4:

A copy of the Letter of Notification will be served on those entities contemporaneously with the filing of these data request responses.

PECO Energy Company
Letter of Notification for Peach Bottom Transmission Reconfiguration
Docket No. A-2015-2496406
PECO Energy Company's Response to Staff Data Requests

Data Request 5: Please provide the right-of-way width and the location of the proposed HV line within each city, borough, town and township traversed. Exhibit A filed with the LON application does not identify which is the underground line to be replaced or the proposed aerial line.

PECO Response to Data Request 5:

The existing 220-34 overhead (aerial) transmission line terminates at the Peach Bottom North Substation with a short section (0.33 miles) of underground Low Pressure Fluid Filled (LPFF) cable. The scope of work of this project is to replace that section of LPFF with overhead (aerial) conductor. The Right of Way for the project scope is located in Peach Bottom Township, York County, PA. In general, the right-of-way will be a minimum of 150' in width. Please see response to Data Request 1(c) and Attachment DR2 for additional detail on ROW width and location of line.

PECO Energy Company
Letter of Notification for Peach Bottom Transmission Reconfiguration
Docket No. A-2015-2496406
PECO Energy Company's Response to Staff Data Requests

Data Request 6: If applicable, what is the PJM project ID No. for the proposed project? Has this project been submitted to the PJM Transmission Expansion Advisory Committee (TEAC)? If so, please provide a description of the project as submitted to the TEAC. If this project is part of a larger project, explain in detail the larger project of which the instant LON is a part. Please describe how this project will mitigate potential planning criteria violations.

PECO Response to Data Request 6:

This is not a RTEP project, and there is therefore no PJM project ID. This is a System Performance project replacing an obsolete Low Pressure Fluid Filled (LPFF) cable with an aerial line. PECO does not notify PJM for System Performance projects. The transmission line rating will not go down and the impedance change is insignificant.

PECO Energy Company
Letter of Notification for Peach Bottom Transmission Reconfiguration
Docket No. A-2015-2496406
PECO Energy Company's Response to Staff Data Requests

Data Request 7: Provide a breakdown of project costs. Please explain who will own, finance and build the proposed project. Please provide copies of any applicable Affiliated Interest Agreements.

PECO Response to Data Request 7:

Total estimated cost for 220-34 cable replacement at Peach Bottom is \$4.4M, which breaks down as shown below:

- Material cost- \$0.7M
- Electrical Installation cost- \$1.5M
- Civil Installation cost- \$0.7M
- Design Engineering cost- \$0.4M
- Contingency- \$0.4M
- Overheads & Indirects- \$0.7M

PECO will own, finance, and build the proposed project.

A consent to construct outside of existing easement areas, signed by Exelon Generation Company (an affiliate of PECO) is attached.



Memorandum

Date: September 16, 2015
To: Michael J. Massaro
From: John C. Halderman 
Subject: New PECO Transmission Line easement on Peach Bottom Atomic Power Station land

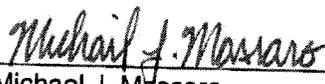
Reference is made to the Easement and License Agreement by and between Exelon Generation Company, LLC and PECO Energy Company dated January 1, 2001 (the "Easement") (copy attached) pursuant to which PECO has an easement to construct, operation and maintain substation and transmission facilities on Peach Bottom Atomic Power Station land. PECO proposes to retire an existing underground transmission line facility and replace it with an overhead transmission line facility in an 150 foot wide corridor, as shown on the attached drawings.

Under Section 6.1 of the Easement, PECO needs the prior written consent of Exelon Generation prior to constructing facilities outside of existing easement areas. Please indicate Exelon Generation's consent to PECO's installation of transmission facilities in the new 150 wide corridor subject to PECO's compliance with the terms and conditions of the Easement by signing a copy of this memorandum below and returning it to me.

Accepted and Agreed this 16 day of

September, 2015

Exelon Generation Company, LLC

By:  9/16/2015
Michael J. Massaro,
Site Vice President

VERIFICATION

Re: Letter of Notification of PECO Energy Company for Reconfiguration of a Segment of PECO's
220-24 230 kV Transmission Line in Peach Bottom Township, York County, Pennsylvania Docket No. A-
2015-2496406

I, Edward J. Veneziale, Manager of Project Manager for PECO Energy Company, hereby state that the facts set forth above are true and correct to the best of my knowledge, information and belief, and that I expect to be able to prove the same at any hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).



Edward J. Veneziale

Manager, Project Management

PECO Energy Company

9-23-15

Date