Tishekia E. Williams
Managing Counsel, Regulatory

411 Seventh Avenue
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March 13, 2017

VIA ELECTRONIC FILING

Ms. Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120

Re: Letter of Notification of Duquesne Light Company
Docket No. A- 2017_____

Dear Secretary Chiavetta:

Pursuant to 52 Pa. Code§ 57.72(d), Duquesne Light Company ("Duquesne Light"), hereby files this Letter of Notification requesting Pennsylvania Public Utility Commission approval to reconductor 6.96 miles of the existing 138 kV Woodville-Peters circuit. The project is a PJM Interconnection baseline project which must be completed by June l, 2018.

Copies of this filing will be served as indicated on the Certificate of Service as well as provided to all potentially impacted property owners. If you have any questions, please feel to contact me at 412-393-1541.

Respectfully Submitted,

Tishekia E. Williams
Attorney ID#208997

Cc: Enclosures
Certificate of Service

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Letter of Notification of Duquesne Light Company, Filed Pursuant to 52 Pa. Code Chapter 57 Subchapter G, for Approval to Reconductor a Segment of an Existing 138KV Transmission Line Located in the Boroughs of West Mifflin, Dravosburg, and Jefferson Hills, and the City of Clairton in Allegheny County, PA.	:	Docket No. A-2017-_____

LETTER OF NOTIFICATION OF DUQUESNE LIGHT COMPANY

TO THE PENNSYLVANIA PUBLIC UTILITY COMMISSION:

I. INTRODUCTION

Pursuant to 52 Pa. Code § 57.72(d), Duquesne Light Company ("Duquesne Light" or "Company"), files this Letter of Notification requesting approval from the Pennsylvania Public Utility Commission ("Commission") to reenergize and reconfigure an idle 138 kV circuit (Z-14/Z-15). The Project is a PJM Interconnection, LLC ("PJM") Baseline Project (project ID B2689) required to relieve congestion on two (2) Duquesne Light 138 kV facilities: the Dravosburg-West Mifflin ("Z-73") 138 kV circuit and the Woodville-Peters ("Z-117") 138 kV tie-line circuit.[1] The Project is approved in the 2015 PJM Regional Transmission Expansion Plan ("RTEP").

This Project is located in West Mifflin, Dravosburg, Jefferson Hills, and Clairton

[1] Duquesne Light filed a separate Letter of Notification on January 17, 2017 at docket number A-2017-2584539 for the reconductoring of the Woodville-Peters (Z-117) 138 kV circuit which is associated with an overall solution to relieve the congestion on the Z-73 and Z-117 circuits. That Letter of Notification was approved on February 9, 2017.

municipalities in Allegheny County, Pennsylvania. Duquesne Light has provided information regarding this Project to impacted municipalities, which have not objected to the Project. Construction on the Project is scheduled to begin in September 2017 and must be completed by June 1, 2018.

In support of its request for approval, Duquesne Light states as follows:

II. BACKGROUND

1. Duquesne Light is a public utility as the term is defined under Section 102 of the Public Utility Code, 66 Pa.C.S. § 102, and is certificated by the Commission to provide electric distribution service in portions of Allegheny County and Beaver County in Pennsylvania. Duquesne Light is also an electric distribution company ("EDC") and a default service provider as those terms are defined under Section 2803 of the Public Utility Code. 66 Pa.C.S. § 2803.

2. Duquesne Light owns approximately 677 miles of transmission lines operating at 69 kV, 138 kV, and 345 kV, and approximately 8,210 miles of distribution lines operating at less than 69 kV. Duquesne Light's transmission facilities are presently operated subject to the functional control of PJM.

3. Duquesne Light's business address is as follows:

Duquesne Light Company
411 Seventh Avenue
Pittsburgh, PA 15219

4. Duquesne Light's attorney in this matter is:

Tishekia E. Williams (Pa. I.D. No. 208997)
Managing Counsel, Regulatory
Duquesne Light Company
411 Seventh Avenue, 15th Fl..
Pittsburgh, PA 15219
Phone: 412-292-1541

Fax: 412-393-5757
E-mail: Twilliams@duqlight.com

Duquesne Light's attorney is authorized to electronically receive all notices and communications regarding this filing. Further, counsel for Duquesne Light consents to the service of documents by electronic mail at the above e-mail address, pursuant to 52 Pa. Code § 1.54(b)(3).

5. This Letter of Notification includes the following accompanying attachments:

- Attachment 1 – Duquesne Light's Proposal to PJM
- Attachment 2 – USGS Maps With Present and Proposed Circuit Configuration
- Attachment 3 – Design Criteria and Safety Practices
- Attachment 4 – Typical Cross Section 138kV Circuits Between Dravosburg and Wilson Substations, Duquesne Light Company, Allegheny County, PA
- Attachment 5 – Description of the Project Area

This Letter of Notification and accompanying Attachments, which are incorporated herein by reference, contain all the information required by 52 Pa. Code §57.72(d)(4).

III. GENERAL DESCRIPTION OF THE PROJECT

A. TRANSMISSION PLANNING

6. Duquesne Light has adopted reliability and planning standards to ensure adequate and appropriate levels of electric service to its customers consistent with good utility practice. Duquesne Light's reliability and planning standards were developed from and are consistent with the North American Electric Reliability Corporation ("NERC") and PJM mandatory reliability standards.[2]

[2] Duquesne Light's reliability and planning standards are set forth in its FERC Form No. 715 annual report.

7. PJM is a Federal Energy Regulatory Commission ("FERC") approved Regional Transmission Organization ("RTO"), charged with ensuring the reliability of the electric transmission system under its functional control and coordinating the movement of electricity in all or parts of thirteen states and the District of Columbia, including most of Pennsylvania. As a Transmission Owner, Duquesne Light is a member of PJM and actively participates in the PJM transmission planning process.

8. In order to ensure reliable and economic transmission service, PJM prepares an annual Regional Transmission Expansion Plan ("RTEP") to ensure power continues to flow reliably and economically to customers. As part of PJM's RTEP process, Duquesne Light's transmission systems are analyzed for economic or Market Efficiency opportunities. PJM's Market Efficiency analysis is an evaluation process that results in facilities planned to achieve economic efficiencies.

9. Through the RTEP process, PJM evaluates the cost effectiveness of alternative options for improving transmission efficiency. The measure of projected congestion is based on a market analysis of future system conditions performed with a commercially available economic dispatch market analysis tool. Market Efficiency projects must pass PJM's threshold test and bright line economic efficiency test. These tests specify that a proposed solution's savings must exceed its projected revenue requirements, on a 15 year present worth basis, by at least 25% (the threshold cost/benefit test).[3]

10. The Project was evaluated and approved through the PJM RTEP process. A copy of Duquesne Light's proposal submitted to PJM is attached as Attachment 1. Duquesne Light

[3] PJM's Market Efficiency planning process is outlined in Schedule 6 Regional Transmission Expansion Planning Protocol, Section 1.5.7 Development of Economic-based Enhancements or Expansions of the PJM Operating Agreement and PJM Manual 14B: PJM Region Transmission Planning Process http://www.pjm.com/~/media/documents/manuals/m14b.ashx

submitted the Project to PJM on February 27, 2015 for review and inclusion in the 2015 RTEP. The Project was presented before stakeholders at the PJM Transmission Expansion Advisory Committee ("TEAC") meeting on September 10, 2015, and approved by the PJM Board.[4]

B. DESCRIPTION OF THE LINE ROUTE

11. The Project, as discussed herein, involves work that will be performed on circuits Z-14 and Z-15. These circuits are located in the municipalities of West Mifflin, Jefferson Hills, Dravosburg, and Clairton in Allegheny County.

12. The new Z-15 circuit will include energizing 6.0 miles of the existing idle transmission line conductors from Dravosburg Substation to structure 3239-1 and connecting to the existing segment of Z-14 from structure 3239-1 to USX Clairton Substation for a total length of 7.9 miles.

13. At structure 3239-1, a jumper loop extending from the northwest side of the tower to the northeast side of the tower will be added. The jumper loop will connect the existing idle segment of Z-15 heading north towards Dravosburg Substation to the existing Z-14 circuit segment on the north side of the line heading east towards USX Clairton Substation. The jumper loop will energize the Z-15 segment north to Dravosburg from structure 3239-1. The existing jumper loop connecting the two existing segments of Z-14 to USX Clairton substation and to Wilson substation will be cut and the segment from structure 3239-1 north to Wilson substation will be left idle.

14. The new Z-14 circuit will begin at West Mifflin Substation, and will utilize 4.77 miles of existing conductor between West Mifflin Substation and structure 3230. New conductor will be installed from structure 3230 and move east, for 0.031 miles, to connect into the Wilson

[4] The Project was included in the 2015 RTEP as baseline project b2698.1 and b2698.2.

substation. The new conductor will be installed on Duquesne Light owned property. The total length of the new Z-14 circuit will be 4.8 miles. The remaining 1.2 mile segment of the existing Z-14 circuit from structure 3230 near the Wilson substation south to structure 3239-1 will become idle. Both new circuits described above will utilize the existing 795 aluminum conductor steel reinforced ("ACSR") 26/7 conductor. From structure 3230 into Wilson Substation, the new conductor will be 795 aluminum conductor steel supported trapezoidal ("ACSS/TW") 20/7.

15. No new rights-of-way are required for this project. No new transmission structures are required for the reconfiguration of the Z-15 circuit. Three (3) additional steel monopoles and one steel H-frame structure are required for the Z-14 circuit; these additional structures will be located on Duquesne Light owned property.

C. THE PROPOSED PROJECT

16. Subject to Commission approval, construction of this project is scheduled to begin as soon as practicable after receiving Commission approval in order to meet an in-service date of June 2018.

D. NEED FOR THE PROJECT

17. PJM identified congestion on the Dravosburg-West Mifflin (Z-73) 138 kV circuit, and the Woodville-Peters (Z-117) 138 kV tie-line circuit that should be alleviated to help ensure continued economic operations of the bulk power system. To relieve the PJM identified congestion, Duquesne Light proposes to reconductor a portion of the Woodville-Peters (Z-117) 138 kV tie-line, reconfigure the idled Dravosburg-Elrama (Z-15) line segment, reconfigure the present West Mifflin-USS Clairton (Z-14) 138 kV circuits, and create the Dravosburg-USS Clairton (Z-15) and West-Mifflin-Wilson (Z-14) 138 kV circuits.[5] The Project will increase the

[5] Refer to Footnote 1 regarding the scope of this LON.

circuit loading capabilities, which will relieve the congestion that PJM identified in its Market Efficiency Analysis.

18. The Project meets PJM's Market Efficiency planning criteria, including the required 1.25 benefit to cost ratio. PJM determined the benefit to cost ratio for this project to be 1.98.

E. HEALTH AND SAFETY

19. The Project will not create any unreasonable risk of danger to public health or safety.

20. The Project will be designed, constructed, operated, and maintained in a manner that meets or surpasses all applicable NESC minimum standards. The Project will also conform to Duquesne Light's design criteria, construction standards, and safety practices. See Attachment 3 – Duquesne Light's Design Criteria and Safety Practices.

21. The Project is not expected to have any impact on pipelines, other utilities or telecommunications.

22. The Finleyville Airport is located approximately 6.1 miles from the nearest transmission line. The second closest airport is Pittsburgh International Airport, which is approximately 17.75 miles from the nearest transmission line construction. There are no expected impacts to either airport based on the distance, presence of the existing transmission facilities, and the fact that the structures will not be raised or changed. The new structures near Wilson Substation will be shorter than the existing structures in the area.

F. DESCRIPTION OF RIGHT-OF-WAY

23. The right-of-way appearance and the structure configuration will not change as the result of the reenergizing and reconfiguring of the existing lines.

24. Duquesne Light's vegetation management practices are based on maintenance rights acquired, voltage of the line involved, proximity of trees to the facilities, and the species and condition of trees involved. Attachment 5 – Description of the Project Area details the

Company's vegetation management and land use procedures related to this project.

25. There are no state lands, national parks, state parks, or local parks within the Project area. The Project will not affect any recreational areas or natural landmarks. The Project will not traverse or affect any unique geological, scenic, or natural areas.

26. Duquesne Light will review the Project with the Pennsylvania Historical and Museum Commission ("PHMC") to determine whether the project will have any impacts to cultural and archaeological resources. Duquesne Light will coordinate with and comply with any surveys or conditions required by the PHMC.

27. Duquesne Light will obtain all necessary environmental permits. Duquesne Light will comply with all of the terms and conditions placed on those permits.

28. Duquesne Light will acquire any required soil erosion and sedimentation control permits and will comply with any conditions placed on those permits. Duquesne Light also will develop an Erosion and Sedimentation Control Plan. A Post Construction Stormwater Management/Site Restoration ("PCSM") Plan will be prepared if required.

G. NOTICE

29. Duquesne Light has provided information regarding the Project to representatives of the Borough of Dravosburg, West Mifflin Borough, the Borough of Jefferson Hills, and the City of Clairton in Allegheny County. These entities have not objected to the Project.

30. Copies of this Letter of Notification will be served on the governmental agencies, municipalities, and other public entities agencies in accordance with 52 Pa. Code § 57.72(d)(3).

31. All landowners potentially impacted by the reenergization and idling of the lines will be notified concerning the project, potential temporary project impacts and receive a copy of this filing. Damages, if any, would be restored.

32. Duquesne Light has reviewed the Pennsylvania Natural Diversity Inventory ("PNDI")

records under the jurisdiction of the Pennsylvania Department of Conservation and Natural Resources, the Pennsylvania Fish and Boat Commission ("PFBC"), the Pennsylvania Game Commission, and the U.S. Fish and Wildlife Service. Based on this review, no further review is required by these jurisdictional agencies. Since the Project will be located entirely on DLC property and involves the reenergization and idling of existing lines along an existing ROW, it is anticipated that the Project will have no material impact to any wildlife or vegetation listed as threatened, endangered, or species of special concern. Notwithstanding, Duquesne Light will, to the extent required, coordinate with these agencies, acquire any required permits, and comply with any conditions placed on those permits.

H. LETTER OF NOTIFICATION

33. Duquesne Light is proceeding by means of a Letter of Notification, instead of a full transmission siting Application, pursuant to the Commission's regulations at 52 Pa. Code §§ 57.72(d)(1)(i) and 57.72(d)(1)(v).

34. The transmission line work associated with this Project qualifies for use of a Letter of Notification because the entire Project will be constructed solely within the existing right-of-way or property that is owned in fee by Duquesne Light.

35. The transmission line work associated with this Project further qualifies for use of a Letter of Notification because the existing idled conductors on the line are being reenergized with no significant changes in the size, character, design or configuration of the conductors and it does not substantially alter the right-of-way.

IV. EXPEDITED REVIEW AND CONSIDERATION

36. As discussed above, the Project has been identified and approved as a PJM baseload project necessary to relieve congestion and help ensure the continued economic operation of the bulk power system.

37. Duquesne Light is required to complete this Project by June 1, 2018. As a Transmission Owner within PJM and a signatory to the PJM Consolidated Transmission Owners Agreement ("TOA"), PJM has the authority to designate construction responsibility for baseline projects.

38. Inability to meet the required in-service date may result in Duquesne Light's failure to meet its obligations under the TOA. Accordingly, the Company respectfully requests expedited review and consideration of this filing.

V. CONCLUSION

WHEREFORE, in consideration of the foregoing, Duquesne Light respectfully requests that the Pennsylvania Public Utility Commission grant Duquesne Light Company approval, on an expedited basis, to proceed with the reconductoring of the proposed line as described in this Letter of Notification.

Respectfully submitted,

Tishekia E. Williams, (Pa. I.D. No. 208997)
Managing Counsel, Regulatory
Duquesne Light Company
411 Seventh Avenue, 15th Floor
Pittsburgh, PA 15219
Phone: 412-393-1541
412-393-1482
Email: twilliams@duqlight.com

Counsel for Duquesne Light Company

DATE: March 13, 2017

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Letter of Notification of Duquesne Light Company, Filed Pursuant to 52 Pa. Code Chapter 57 Subchapter G, for Approval to Reconductor a Segment of an Existing 138KV Transmission Line Located in the Boroughs of West Mifflin, Dravosburg, and Jefferson Hills, and the City of Clairton in Allegheny County, PA.	:	Docket No. A-2017-_____

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a true copy of the Application and Exhibits upon the participants listed below in accordance with the requirements of 52 Pa. Code § 57.74(b) (relating to service of copies):

VIA CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Borough of Dravosburg
Brenda Honick, Secretary
Borough of Dravosburg
226 Maple Avenue
Dravosburg, PA 15034

Planning Commission Chair - Dravosburg
John Palcsey, Chair
226 Maple Avenue
Dravosburg, PA 15034

West Mifflin Borough
Brian Kamauf, Manager
1020 Lebanon Road
West Mifflin, PA 15122

Planning Commission Chair – West Mifflin
Daniel Davis, Chair
1020 Lebanon Road
West Mifflin, PA 15122

Jefferson Hills Borough
Tricia Levander, Manager
925 Old Clairton Road
Jefferson Hills, PA 15025

Planning Commission Chair – Jefferson Hills
David Montgomery, Chair
925 Old Clairton Road
Jefferson Hills, PA 15025

City of Clairton
Howard Bednar, Manager
551 Ravensburg Boulevard
Clairton, PA 15025

Planning Commission Chair - Clairton
Desiree Williams, Chair
551 Ravensburg Boulevard
Clairton, PA 15025

Allegheny County Planning Commission
Rich Fitzgerald – County Executive
Allegheny County
436 Grant Street
Pittsburgh, PA 15219

Duquesne Light Company
411 Seventh Avenue
Pittsburgh, PA 15219

Patrick McDonnell – Acting Secretary
Department of Environmental Protection
Rachel Carson State Office Building
400 Market Street
Harrisburg, PA 17101

Leslie S. Richards – Secretary
PA Department of Transportation
Keystone Building
400 North St.
Harrisburg, PA 17120

Nancy Moses – Chairman
Historical and Museum Commission
State Museum Building
300 North Street
Harrisburg, PA 17120

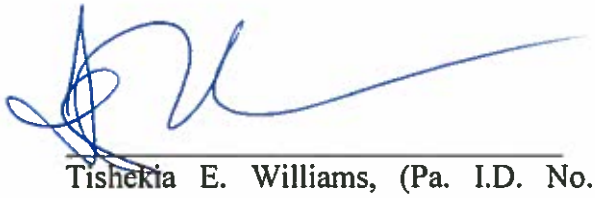
Donna Killingsworh – Manager Real Estate
Pittsburgh & Ohio Central RR Co, c/o Genesee & Wyoming Railroad Services, Inc,
13901 Sutton Park Dr., S Suite 160
Jacksonville, FL 32224

Donald Newman – Chairman of the Board
Allegheny County Conservation District
River Walk Corporate Center
33 Terminal Way, Suite 325B
Pittsburgh, PA 15219

John Soprano – Director
Bureau of Enforcement and Investigation
Penn Center, 2601 N. 3rd Street
Harrisburg, PA 17110

Tanya J. McCloskey – Acting Consumer Advocate
Pennsylvania Office of Consumer Advocate
555 Walnut Street
Forum Place, 5th Floor
Harrisburg, PA 17101-1923

John R. Evans – Small Business Advocate
Pennsylvania Office of Small Business
300 North Second Street, Suite 202
Harrisburg, PA 17101



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Phone: 412-393-1541
412-393-1482
Email: twilliams@duqlight.com

Counsel for Duquesne Light Company

Date: March 13, 2017

VERIFICATION

I, MEENAH SHYU, PE, being the MANAGER of CIVIL AND TRANSMISSION LINE ENGINEERING at Duquesne Light Company hereby state that the facts set forth above are true and correct to the best of my knowledge, information and belief; that I expect Duquesne Light Company to be able to prove the same at the time of a hearing held in this matter. I understand the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 relating to unsworn falsification to authorities.

Date: 3/10/2017

Meenah Shyu, PE

Duquesne Light

Our Energy…Your Power

2014/15 RTEP Long Term Proposal Window

2014/15 RTEP Market Efficiency

[Public Version]

Submitted February 27, 2015

Table of Contents

Contact Information

Name and address of the proposing entity:

Duquesne Light Company
411 Seventh Avenue
Pittsburgh, PA 15219

[redacted]

[redacted]

Statement of Intent to be the Designated Entity for the Proposed Project

Duquesne Light Company intends to be the Designated Entity for the proposed project.

1.0 Background

This proposal by Duquesne Light Company (Duquesne) responds to the October 30, 2014 Request for Proposal - PJM 2014/15 RTEP Long Term Proposal Window (RFP) which seeks solutions to identified Reliability Criteria violations, Market Efficiency congestion, and Reliability Pricing Model (RPM) limiting constraints. Specifically, this proposal addresses the Market Efficiency congestion results recommended for proposals specific to the congestion of the Duquesne Woodville to USAP 138 kV line and the Dravosburg to West Mifflin 138 kV line. Within this proposal, Duquesne provides a solution to relieve the congestion with a benefit/cost ratio above 1.25.

Provided with the PJM RFP is a spreadsheet containing a complete set of Market Efficiency congestion results. The results for the Dravosburg to West Mifflin 138 kV line indicate 567 and 589 hours of congestion resulting in market congestion of $4.7 to $7.1 million for the study years of 2019 and 2022 respectively. The results for the Woodville to USAP 138 kV line indicate 131 and 218 hours of congestion resulting in market congestion of $1.7 and $4.7 million for the two study years. Duquesne's proposal addresses the above referenced congestion results.

2.0 Proposed Solution

2.1 Description of Proposed Solution

The Duquesne proposal recommends one solution to address congestion on both the Woodville to USAP 138 kV line and the Dravosburg to West Mifflin 138 kV line. The proposal is a combination of two separate projects that combined as well as individually exceed the 1.25 benefit/cost ratio threshold.

The first segment of Duquesne's proposed solution is to upgrade the Duquesne-owned portion of the Woodville [DLC]-Peters [APS] (Z-117)138 kV tie line. The Woodville to USAP 138 kV line is part of the larger Z-117 tie line. The Duquesne proposal includes upgrading the Duquesne portion of this circuit by replacing the 6.91 miles of line conductor and upgrading to the terminal equipment at the Duquesne Woodville and USAP substations.

The second segment of Duquesne's proposed solution is to utilize the idled Dravosburg-Elrama (Z-15) 138 kV circuit[1] and reroute it creating a new Dravosburg -USS Clairton (Z-15) 138kV circuit. The existing West Mifflin-USS Clairton (Z-14) 138 kV circuit will be re-routed to Wilson substation creating a West Mifflin-Wilson (Z-14) 138 kV circuit. The present Z-14 and idled Z-15 circuits share a common tower line that occupies the same corridor as the circuits that currently serve Wilson substation and therefore pass close by Wilson substation. Existing overhead conductor will be utilized except for approximately 200 feet of new conductor required to connect the circuit to the Wilson line position and for the addition of tower jumpers. Terminal equipment upgrades will also take place at Dravosburg, Wilson, and USS Clairton substations.

Both segments of Duquesne's proposal upgrade and reconfigure Duquesne-owned facilities and occur entirely on existing Duquesne property and right-of-way.

See Figure 1 and Figure 2 in Appendix 1 for present and proposed single line diagrams for this project.

[1] This circuit was idled in 2014 as part of PJM baseline project b2174.7

2.2 Location of Proposed Project

The proposal, including both segments, takes place entirely on Duquesne-owned property and right-of-way in Allegheny County in the Commonwealth of Pennsylvania.

2.3 Construction Schedule

The proposed schedule for this project is detailed below. The schedule assumes that PJM has assigned Duquesne to be the Designated Entity for this project prior to July 31, 2014. All terminal equipment will be constructed within existing Duquesne substations. Modifications to the 138kV circuits will be made entirely within Duquesne-owned right-of-way or property; no additional right-of-way or property is required. The modifications proposed in this proposal will require approval from the Pennsylvania Public Utility Commission (PAPUC). Based on 52 Pa. Code § 57.72, the scope of this project meets the requirements for approval with a Letter of Notification rather than a full siting application.

Engineering	8/1/2015 through 12/1/2016
Siting	6/1/2016 through 12/31/2016
Procurement	1/1/2017 through 9/15/2017
Construction	9/15/2017 through 5/31/2018
In Service Date	5/31/2018

2.4 Cost Estimates

This project is estimated to cost $11,184,000.00. A breakdown of these costs by component is included in Table 1.

Table 1: Project Cost Estimate by Component

Component	Description	Cost Estimate
Component 1	Reconductor 6.91 miles of the Woodville [DLC]-Peters [APS] (Z-117)138 kV tie line	$ 9,677,000.00
Component 2	Replace Z-117 138kV line breaker at Woodville and upgrade Woodville and USAP substation terminal equipment	$ 553,000.00
Component 3	Establish the Dravosburg-USS Clairton (Z-14) and West Mifflin-Wilson (Z-15) 138kV circuits and install new 138kV breaker at Dravosburg	$ 954,000.00
	Total	$ 11,184,000.00

3.0 Results and Analyses

3.1 Market Efficiency Analysis

Duquesne contracted with Ventyx to perform the market efficiency simulations associated with this proposal. The economic simulations were performed in accordance with PJM's market efficiency simulation procedures and the *Market Efficiency Modeling Practices Document* that accompanied PJM's RFP. For each of four calendar years – 2015, 2019, 2022, and 2025 – a market simulation was

performed, with and without the transmission project in service, using ABB's PROMOD IV® nodal market simulation software.

The change in net load payment benefits and change in production cost benefits were entered by zone for each of the simulation years into the PJM Market Efficiency Benefit Cost Tool. Duquesne's proposal provides $109.4M of benefit based on the low voltage calculation method. This tool was also used to determine a benefit/cost ratio of 6.72 based on the projected project cost and in-service date.

Duquesne has provided the PJM Market Efficiency Benefit Cost Tool for the proposed solution and individually for the two segments, which combined comprise Duquesne's complete proposed solution. Additionally, Duquesne has provided a PROMOD model change file in XML format and a PSSE IDEV file compatible with the PJM 2018 RTEP power flow case for the proposed project.

3.2 Steady State Analysis

The Siemens Power Technologies International Load Flow program (PSS/E) was used to perform both a thermal and voltage analysis of the transmission system. The base case utilized for this study was provided by PJM for the 2014 RTEP proposal window. The contingency files supplied with the case were updated to reflect the changes resulting from this proposal. Updated contingency files are being provided to PJM with this proposal and individual changes have been highlighted in a separate attachment. These updated contingency files were used to test for NERC Category B (N-1), Category C1 (bus), Category C2 (breaker failure), and Category C5 (common structure) contingencies. NERC Category C3 (N-1-1) contingencies were tested utilizing the global double command inherent to PSS/E.

The steady state analysis indicated that the proposed solution does not create any new thermal or voltage violations.

3.3 Short Circuit Analysis

A short circuit analysis was performed using CAPE to analyze the impacts of Duquesne's proposed solution. A 2019 short circuit case was utilized for this assessment.

The short circuit analysis indicated that this proposal does not increase the maximum fault duty of any breakers beyond their rated fault duty.

4.0 Qualification of the Sponsor

Duquesne intends to be the Designated Entity for the proposed project. As documented in Duquesne's Prequalification Package accepted by PJM on January 29, 2014 (PJM ID Q13-17), Duquesne has the technical and engineering qualifications relevant to construction, operation and maintenance as well as demonstrated experience to develop, construct, maintain and operate the transmission facilities such as those contained within this proposal.

http://www.pjm.com/~/media/planning/rtep-dev/expan-plan-process/ferc-order-1000/pre-qual-duquesne-light-company.ashx

Attachments

The following documents have been included as attachments to this proposal:

- DLC 2014-15 RTEP Long Term Window Proposal ME Benefit Cost Tool Full Project.xlsx
- DLC 2014-15 RTEP Long Term Window Proposal ME Benefit Cost Tool Segment1.xlsx
- DLC 2014-15 RTEP Long Term Window Proposal ME Benefit Cost Tool Segment2.xlsx
- DLC 2014-15 RTEP Long Term Window Proposal ME PROMOD Model Changes v11.1.4.XML
- DLC 2014-15 RTEP Long Term Window Proposal ME PROMOD Monitor File.eve
- DLC 2014-15 RTEP Long Term Window Proposal Market Efficiency Project Proposal.idv
- DLC 2014-15 RTEP Long Term Window Proposal Contingency File Changes.pdf
- 2019_RTEP_Summer_Single_ 04302014-With DLCO Proposal.con
- 2019_RTEP_Summer_Bus_ 04302014 -With DLCO Proposal.con
- 2019_RTEP_Summer_Line_FB_ 04302014 -With DLCO Proposal.con
- 2019_RTEP_Summer_Tower_ 04302014 -With DLCO Proposal.con

Appendix 1 Diagrams

Figure 1: DLC Market Efficiency Single Line Diagram (Present – February 2015)

[Redacted Single Line Diagram]

Figure 2: DLC Market Efficiency Single Line Diagram (Proposed – May 2018)

[Redacted Single Line Diagram]

Figure 3: Aerial View of Wilson Substation

[Redacted Aerial View]

2014 RTEP Proposal Template

Version 1: Posted 8/27/2014

Overloaded Facilities									Solution											
FG #	Analysis Type	Fr Bus	Fr Name	To Bus	To Name	CKT	KVs	Areas	General Description/Scope	Component 1	Component 2	Component 3	Component 4	Component 5	Component 6	Component 7	Component 8	Component 9	Component 10	Cost* ($, Millions)
N/A	Market Efficiency		Woodville		USAP	1	138	DLC	Reconductor approximately 7 miles of the Woodville-Peters (Z-117) 138kV circuit, reconfigure the West Mifflin-USS Clairton (Z-14) 138kV circuit to establish the Dravosburg-USS Clairton (Z-14) 138kV circuit and the West Mifflin-Wilson (Z-15) 138kV circuit	Reconductor 6.93 miles of the Woodville (DLC)-Peters (APS) (Z-117) 138 kV tie line	Replace Z-117 138kV line breaker at Woodville and upgrade Woodville and USAP substation terminal equipment	Establish the Dravosburg-USS Clairton (Z-14) and West Mifflin-Wilson (Z-15) 138kV circuits and install new 138kV breaker at Dravosburg								11.184
N/A	Market Efficiency		Dravosburg		West Mifflin	1	138	DLC												

Please see example template for details on how to fill out the template

http://pjm.com/~/media/planning/rtep-dev/expan-plan-process/rpc-order-1000/rtep-proposal-windows/2014-rtep-proposal-window-template.ashx

Note A: PJM requires the following Files to be provided

1. Idevs to model the proposed upgrade for each component (please only use unused bus numbers for the creation of new buses)
2. Updated Contingency if upgrade is a new facility or changes the configuration of an existing facility
3. Single line diagram if upgrade is new facility or changes the configuration of an existing facility
4. Project specifics, including by not limited to: Conductor type, mileage, tower type, configuration and technology

Note B: For more detailed projects an additional narrative may be needed to addreses specifics of a project including (when applicible):

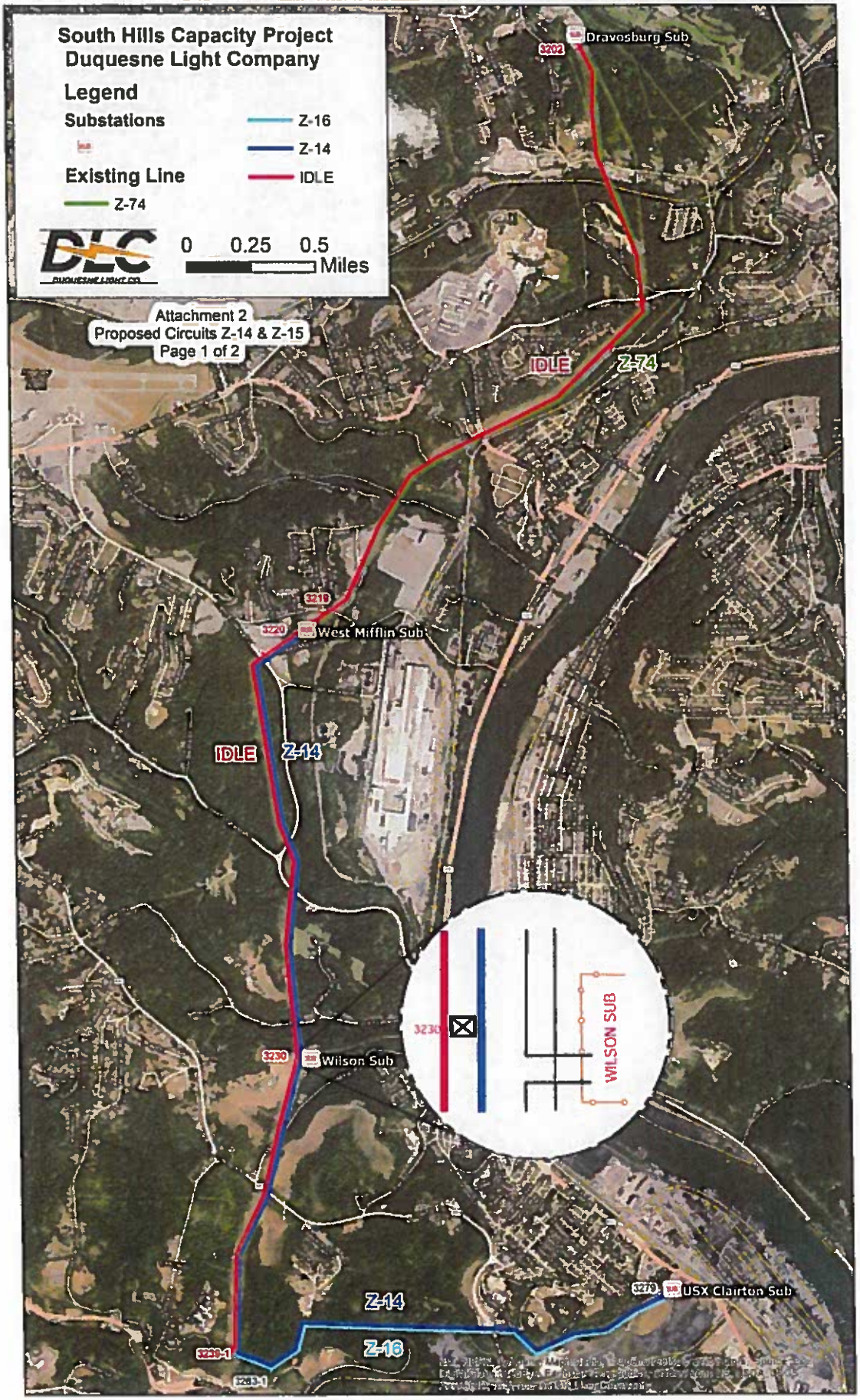
1. Short Circuit and Stability evidence
2. Location plan for work at existing substations
3. Ariel map of the project that reflects route(s) for new facilities
4. Assumtions and/or modifications associated with any protection and control (relaying) work at existing stations
5. Durations and Outages of existing facilities required to complete construction
6. Right of ways, siting and permitting

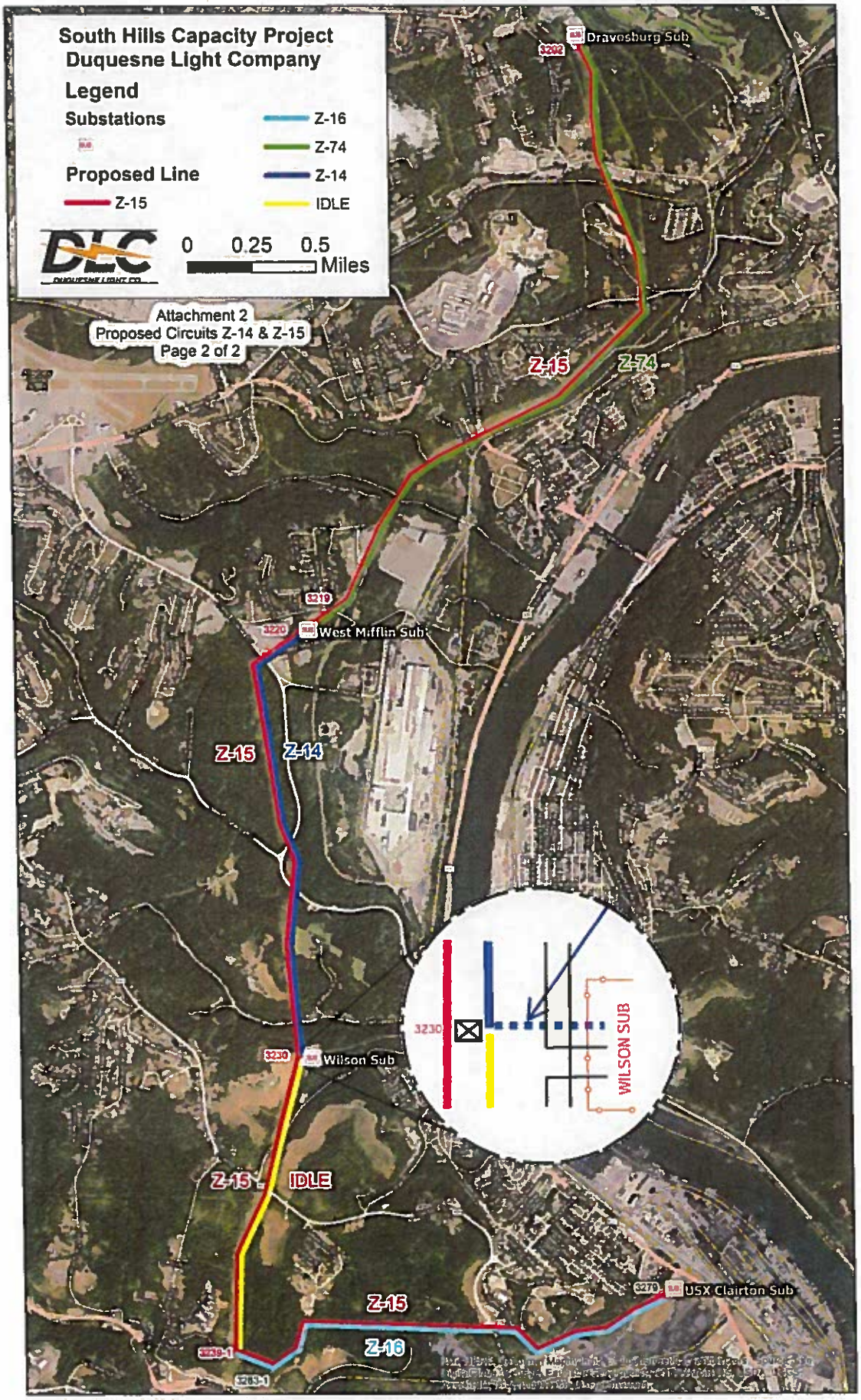
*Detailed cost estimates for each component including a description of assumptions (eg. Base cost, risk and contingency costs, and total cost)

FYI: The upgrades list above are examples based on existing upgrades.

Revision History

V1 Posted 8/27/2014


South Hills Capacity Project
Duquesne Light Company
Legend
Substations
Existing Line
Z-74
Z-16
Z-14
IDLE
0 0.25 0.5
Miles
Attachment 2
Proposed Circuits Z-14 & Z-15
Page 1 of 2
Dravosburg Sub
3202
IDLE
Z-74
3219
3220
West Mifflin Sub
IDLE
Z-14
WILSON SUB
3230
Wilson Sub
Z-14
Z-16
3279
USX Clairton Sub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WILSON SUB
Z-15
IDLE
3279
USX Clairton Sub
Z-15
Z-16
3230-1
3263-1

Attachment 3

Design Criteria and Safety Practices

Engineering Design Criteria

1. The National Electrical Safety Code (NESC) is a set of rules to safeguard the general public during the installation, operation, and maintenance of electric power lines. The NESC contains the basic provisions considered necessary for the safety of employees and the general public. Some of these provisions covered are based on structure loads and operating clearances of the conductors. Although it is not intended as a design specification, its previsions establish minimum design requirements. Duquesne Light Company (DLC) has developed design specifications and safety rules that meet or surpass all requirements specified by the NESC.

   Engineering Design Criteria for all transmission line projects include NESC loading requirements and clearances for design, construction, and operation. NESC defines the "loads" on conductors and supporting structures, plus wind pressure on the conductors and supporting structures. Loading requirements are the loads on the conductors and structures that are anticipated assuming certain ice and wind conditions. Loading requirements always contain "Safety Factors" to allow for unknown or unanticipated contingencies. The clearances and loading requirements contained in the NESC were developed to ensure public safety and welfare.

2. DLC transmission line design standards meet or surpass the NESC standards.

   For example, the relative order of grades of construction for conductors and supporting structures is B, C, and N; Grace B being the highest. According to the NESC standards, construction Grades B, C, or N may be used for transmission lines (except at crossings of railroad tracks and limited access highways where Grade B construction is specified). However, DLC designs all of its transmission lines for Grade B construction. The use of Grade B design and construction specifies enhancements such as larger minimum cross arm dimensions, larger-minimum conductor size, and increased safety factors.

   Another example that DLC surpasses the NESC standards is in the clearance requirements. DLC designs 138kV transmission lines to meet 30 feet of ground clearance under the worst-case load scenario, 9.4 feet more than the NESC minimum of 20.6 feet, for new construction. For reconductor projects and spans with new structures, DLC strives to obtain either 30 feet of ground clearance or NESC+10%, modifying existing structures as necessary to meet this criteria. For all other clearances, NESC+10% is used.

   DLC designs 345kV transmission lines to meet 30 feet of ground clearance under the worst-case load scenario, 5.2 feet more than the NESC minimum of 24.8 feet, for new construction. For reconductor projects and spans with new structures, DLC strives to obtain either 30 feet of ground clearance or NESC+10%, modifying existing structures as necessary to meet this criteria. For all other clearances, NESC+10% is used.

Another example that DLC surpasses the NESC standards is in the structure overload factors. DLC applies overload factors of 1.1 for NESC 250C and NESC 250D loads compared to the NESC requirement of using 1.0 overload factors for NESC 250C and NESC 250D loads.

Periodic Maintenance Program on All Transmission Lines

DLC ensures the continued public safety from our transmission line infrastructure by implementing various maintenance and inspection programs. One program is the routine inspection of as-built conditions to meet clearance requirements described above through advanced surveying technology referred to as "LiDAR". This technology allows DLC to model its transmission system three-dimensionally to analyze clearances from the conductors to the world around them, including vegetation, homes, pools, roads, and more. This program provides DLC with accurate as-built records to ensure compliance with designs while also identifying any new or changing conditions to surrounding landscape.

1. Other DLC Maintenance programs for inspected towers include:
    a. Ground inspections, performed by DLC mobile workers walking around the base of the structure, on approximately 350 structures annually. These inspections focus heavily on foundations, structure integrity, and failed hardware, though additional information may be noted.
    b. Aerial inspections, performed by a DLC subcontractor from a helicopter employing former Journey Linemen, utilizing telescoping lens cameras on approximately 500 structures annually. These inspections focus heavily on hardware and structural defects in tower members, though additional information may be noted.

Personnel Safety Rules

DLC follows OSHA regulations to ensure safe practices. These regulations are incorporated into the DLC employee Safety Handbook. DLC safety rules and good practices include the following:

1. Only qualified employees and trainees working under their direct supervision may work on or with exposed energized lines or parts of equipment operating at 50 volts or more, and must be familiar with the minimum approach distances as indicated by OSHA regulations.
2. Before work is commenced, a job briefing will be held with all employees to orient each employee as to:
    a. The hazards associated with the job
    b. The work procedures involved
    c. Any special precautions to be taken
    d. All energy source controls
    e. Personal protective equipment required
3. When working in elevated locations, above 4 feet, employees shall use appropriate fall protection systems. Each employee working from an aerial lift, bucket truck, or man lift shall use a full body harness and either a shock absorbing lanyard or self-retracting lanyard. DLC ensures that all fall protection follows the OSHA regulations.
4. Prior to climbing towers and other similar structures a documented visual inspection shall be conducted by a competent person to:

a. Determine type or work, materials, and construction methods required.
b. Determine physical condition of the structure.
c. Contact Engineering to determine if a structural analysis has been performed to identify tie off and anchorage points for construction activities.
d. Tie off and anchorage points follow the OSHA regulations, in which the tie off points can support 5,000 lbs per employee or a twice the impact load per employee.
e. Determine the type of fall protection systems to be used, appropriate anchorage points and complete documented fall safety analysis.

All work is to be inspected prior to construction to evaluate the site conditions. If there are any concerns about the integrity of a structure, DLC Engineering is engaged to perform the appropriate investigation and analysis to provide guidance for safely completing the job.

ATTACHMENT 4

TYPICAL CROSS SECTION
138KV CIRCUITS BETWEEN
DRAVOSBURG AND WILSON SUBSTATIONS
DUQUESNE LIGHT COMPANY
ALLEGHENY COUNTY, PA

*PROPOSED CHANGE INCLUDED IN LETTER OF NOTIFICATION FOR Z15

Attachment 5

Description of the Project Area

Engineering Description:

The scope of work for Z-15 consists of reenergizing an idled 138kV line by completing a jumper rearrangement at tower 3239-1. For Z-14 this work requires a tap type connection at tower 3230, jumper rearrangements at tower 3239-1, and two new intermediate structures (3230-1 and 3230-2) between tower 3230 and a new circuit position at Wilson Substation, which is all located on DLC property.

Vegetation Management:

No Vegetation Management needed for this portion of the project.

Land Use:

Impacts to land use and the environment are anticipated to be minimal because the circuits are within existing right of way and will either be reenergized or idled. The additional Structures that will be added to tie into Wilson Substation will be constructed and located all on DLC property.

All landowners whose access to their property could be potentially impacted will be notified in writing of the possible use of their land for an Access Easement consistent with the construction, maintenance, repair, renewal, use or operation of said system. Duquesne Light has the right to trim or remove, and control the growth of, by any means selected by Duquesne Light, any trees, brush or shrubbery, and to remove obstructions, which at any time interfere with or threaten to interfere with the access of this easement. Duquesne Light agrees to pay for all damage to fences, crops and other personal property of the Grantor caused by construction, operation, maintenance, rebuilding or removal of said transmission systems, provided notice in writing is given to Duquesne Light within thirty (30) days after said damage occurs.