WestPenn Power
A FirstEnergy Company

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October 19, 2015

VIA eFILING

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor North
Harrisburg, PA 17105-3265

Re: Petition of West Penn Power Company for Approval of its Long-Term Infrastructure Improvement Plan
Docket No. P-2015-

Dear Secretary Chiavetta:

Enclosed for filing is the *Petition of West Penn Power Company for Approval of its Long-Term Infrastructure Improvement Plan* ("Petition"). A copy of West Penn Power Company's ("West Penn") Long-Term Infrastructure Improvement Plan accompanies its Petition as West Penn Exhibit No. 1.

Copies of the enclosed Petition and West Penn Exhibit No. 1 have been served on the persons and in the manner shown on the enclosed Certificate of Service, as required by 52 Pa. Code §121.4(b).

Respectfully submitted,

John L. Munsch

Enclosures

cc: Per Certificate of Service
Honorable Gladys M. Brown (w/encl.)
Honorable John F. Coleman, Jr. (w/encl.)
Honorable Robert F. Powelson (w/encl.)
Honorable Pamela A. Witmer (w/encl.)
Honorable Andrew Place (w/encl.)
Bohdan Pankiw, Chief Counsel (w/encl.)
Paul T. Diskin, Director, Office of Technical Utility Services (w/encl.)

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Petition of West Penn Power Company For Approval of its Long-Term Infrastructure Improvement Plan	: : :	**Docket No. P-2015-_____**

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing **Petition** has been served upon the following persons, in the manner indicated, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

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Date: October 19, 2015

John L. Munsch

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Petition of West Penn Power Company	:	
For Approval of its Long-Term	:	**Docket No. P-2015-_____**
Infrastructure Improvement Plan	:	

Petition of West Penn Power Company for Approval of its Long-Term Infrastructure Improvement Plan

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Pursuant to Section 1352 of the Pennsylvania Public Utility Code ("Code"),[1] 52 Pa. Code §§ 121.1 *et seq.*, and the Pennsylvania Public Utility Commission's ("PUC" or the "Commission") final order in *Implementation of Act 11 of 2012* ("Final Implementation Order"),[2] West Penn Power Company ("West Penn" or the "Company") files this Petition for approval of its Long-Term Infrastructure Improvement Plan ("LTIIP" or "Plan"), which accompanies this Petition as West Penn Exhibit No. 1. As set forth in its LTIIP, the Company proposes to accelerate its investment in repairing, improving, replacing and reinforcing facilities and equipment in its distribution system that constitute "eligible property" as defined in Section 1351 of the Code and 52 Pa. Code § 121.2. Upon approval of its LTIIP, West Penn will file a Petition to establish a distribution system improvement charge ("DSIC") under Section 1353 of the Code to recover the fixed costs of property to be constructed and installed pursuant to its LTIIP. West Penn will not begin to implement its LTIIP until the Commission has approved a DSIC that will permit the Company to recover the fixed costs of the property to be added pursuant to that Plan.

As more fully explained below and in West Penn Exhibit No. 1, West Penn proposes to increase its projected capital investment by $88.34 million over a five-year period (2016-2020) to

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[1] 66 Pa.C.S. § 1352.
[2] *Implementation of Act 11 of 2012*, Docket No. M-2012-2293611 (Final Order entered August 2, 2012).

strengthen, upgrade and modernize its distribution system through various infrastructure improvement initiatives described in detail in Appendix A to its LTIIP. As also explained below, West Penn's LTIIP contains all of the elements required by Section 1352(a)(1)-(6) of the Code and 52 Pa. Code § 121.3 and, therefore, satisfies all of the requirements for Commission approval set forth in Section 1352(a)(7) of the Code and 52 Pa. Code § 121.4(e)(1)-(4). Accordingly, West Penn respectfully requests that the Commission approve its LTIIP submitted as West Penn Exhibit No. 1 to this Petition.

I. INTRODUCTION AND BACKGROUND

1. West Penn provides electric distribution service to approximately 721,000 customers in a certificated service territory encompassing all or portions of twenty-three counties in western and central Pennsylvania. West Penn is a "public utility" and an "electric distribution company" ("EDC") as those terms are defined in the Code.[3] West Penn, together with Metropolitan Edison Company, Pennsylvania Electric Company and Pennsylvania Power Company, is one of four subsidiaries of FirstEnergy Corp. that furnish electric distribution service as public utilities and EDCs in Pennsylvania.

2. The names and addresses of West Penn's attorneys authorized to receive all notices and communications regarding this filing are as follows:

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[3] *See* 66 Pa.C.S. §§ 102 and 2803.

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3. On February 14, 2012, former Governor Corbett signed into law Act 11 of 2012 ("Act 11"), which amended the Code in several respects, including the addition of Subchapter B to Chapter 13 (Sections 1350-1360), which authorizes the Commission to approve DSIC petitions filed by EDCs and other types of utilities. In addition, Subchapter B sets forth various requirements that must be satisfied by a qualifying utility in order to establish a DSIC and recover the fixed costs of DSIC-eligible property. Section 1351 defines "eligible property" in general as "[p]roperty that is part of a distribution system and eligible for repair, improvement and replacement of infrastructure under this subchapter" and provides further:

> (1) For electric distribution companies, eligible property shall include:
>
> (i) Poles and towers.
> (ii) Overhead and underground conductors.
> (iii) Transformers and substation equipment.
> (iv) Any fixture or device related to eligible property under subparagraphs (i), (ii) and (iii), including insulators, circuit breakers, fuses, reclosers, grounding wires, crossarms and brackets, relays, capacitors, converters and condensers.
> (v) Unreimbursed costs related to highway relocation projects where an electric distribution company must relocate its facilities.
> (vi) Other related capitalized costs.

4. Section 1352 of the Code requires that a utility submit an LTIIP "in order to be eligible to recover costs under section 1353 (relating to distribution system improvement charge)." In addition, Section 1352 provides that an LTIIP should include the following information:

> (1) Identification of the types and age of eligible property owned or operated by the utility for which the utility would seek recovery under this subchapter.

(2) An initial schedule for the planned repair and replacement of eligible property.

(3) A general description of the location of the eligible property.

(4) A reasonable estimate of the quantity of eligible property to be improved.

(5) Projected annual expenditures to implement the plan and measures taken to ensure that the plan is cost effective.

(6) The manner in which the replacement of aging infrastructure will be accelerated and how the repair, improvement or replacement will ensure and maintain adequate, efficient, safe, reliable and reasonable service.

5. On August 2, 2012, the Commission entered the Final Implementation Order to explain how it intended to implement the provisions of Subchapter B. In particular, the Final Implementation Order sets forth the Commission's expectation with regard to the contents of an LTIIP by reference to the six elements specifically identified in Section 1352(a) of the Code. The Final Implementation Order also provides guidance to utilities for meeting the Commission's standards for LTIIP approval and discusses the procedures the Commission would follow in reviewing petitions seeking approval of proposed LTIIPs. In that regard, the Commission: (a) recommended that utilities file their LTIIPs in advance of filing DSIC petitions in order to "reduce the scope of issues in the DSIC petition and expedite the process of getting this new rate mechanism in place;"[4] (b) stated that an LTIIP would be assigned to the Bureau of Technical Utility Services ("TUS") for analysis and a recommendation to the Commission;[5] (c) provided that interested parties may file comments within 20 days of the filing of an LTIIP;[6] and (d) established a period of 120 days for review of each proposed LTIIP.[7]

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[4] Final Implementation Order, p. 21.
[5] Final Implementation Order, p. 20.
[6] *Id.* The review period of 20 days stated in the Final Rulemaking Order was subsequently expanded to 30 days in the LTIIP regulations. *See* 52 Pa. Code § 121.4(c).
[7] *Id.*

6. On May 27, 2014, the Commission entered a Final Order adopting the LTIIP regulations that are set forth at 52 Pa. Code §§ 121.1-121.8.[8] The LTIIP regulations adopt and expand upon the requirements set forth in the Final Implementation Order by providing that an LTIIP should include the following eight major elements, as stated in Section 121.3(a):

> (1) Identification of types and age of eligible property owned and operated by the utility for which it is seeking DSIC recovery;
>
> (2) An initial schedule for planned repair and replacement of eligible property;
>
> (3) A general description of the location of the eligible property;
>
> (4) Reasonable estimate of the quantity of eligible property to be improved or repaired;
>
> (5) Projected annual expenditures and means to finance the expenditures;
>
> (6) A description of the manner in which infrastructure replacement will be accelerated and how repair, improvement or replacement will maintain adequate, efficient, safe, reliable and reasonable service to customers;
>
> (7) A workforce management and training program designed to ensure that the utility will have access to a qualified workforce to perform work in a cost-effective, safe and reliable manner;
>
> (8) A description of a utility's outreach and coordination activities with other utilities, Department of Transportation and local governments regarding their planned maintenance/construction projects and roadways that may be impacted by the LTIIP.

7. In Section 121.4(e) of the LTIIP regulations, the Commission provided the criteria it would use to review LTIIPs submitted for its approval, as follows:

> (e) The Commission will review the filed LTIIP and determine if the LTIIP:
>
> (1) Contains measures to ensure that the projected annual expenditures are cost-effective.

[8] *Review of Long-Term Infrastructure Improvement Plan – Final Rulemaking Order*, Docket No. L-2012-2317274, (May 23, 2014). The LTIIP regulations became effective upon publication in the *Pennsylvania Bulletin* on December 20, 2014. *See* 44 Pa.B. 7856.

(2) Specifies the manner in which it accelerates or maintains an accelerated rate of infrastructure repair, improvement or replacement.
(3) Is sufficient to ensure and maintain adequate, efficient, safe, reliable and reasonable service.
(4) Meets the requirements of § 121.3 (relating to LTIIP).

8. Additionally, Section 121.4(f) provides that, if the Commission determines that an LTIIP does not satisfy the requirements of Section 121.3(a) of the LTIIP regulations, the Commission will order the filing of a new or revised LTIIP. Section 121.4(g) explains that, if ordered to file a new or revised LTIIP, a utility may elect to withdraw its LTIIP but, in that event, would not be eligible to implement a DSIC (or to continue its then-existing DSIC, if any).

II. WEST PENN'S LONG-TERM INFRASTRUCTURE IMPROVEMENT PLAN

9. The Company's LTIIP meets the requirements of Section 1352 of the Code and contains the eight major elements set forth in Section 121.3(a) of the Commission's LTIIP regulations, as explained in Subsections A-H, below. The LTIIP covers a broad spectrum of distribution-related equipment and facilities, as discussed in Appendix A of the LTIIP, which are grouped into fifteen categories of DSIC-eligible property, as follows:

- Add Additional Circuit Phases
- Recloser Replacement
- Enhanced Worst Performing Circuits Remediation
- Fuse Installation
- CEMI Program
- Line Rehabilitation
- Underground Substation Exit Replacement
- Underground Residential Development (URD) Cable Replacement

- Wood Pole Replacement
- Unreimbursed Highway Relocation
- Enhanced Overcurrent Protection
- Replace Transformer Arrestors
- Replace Substation Batteries
- Replace Substation Reclosers
- Subtransmission Modernization and Automation

10. Within the description of each asset category discussed in Appendix A, West Penn provides estimates of the number of replacements, reinforcements, conversions or other improvements that will be made, by year, over the LTIIP's five-year planning period. Additionally, for the programs designed to accelerate repair or replacement within each asset category, West Penn provides the following:

- A description of the program and its purpose;
- A description of how the Company identifies equipment for replacement within each asset category and the appropriate course of action for implementing the replacements;
- The scope of the program, including a reasonable estimate of the amount of property to be improved, where such a quantification is applicable;
- The location of planned replacements, where improvements are to be achieved by replacing existing property; and
- The total amount projected to be spent by the Company annually and over the life of the LTIIP.

11. Because the LTIIP is a blueprint for investments that will be made over the course of five years in the future, individual elements of the proposed initiatives that will be implemented in each asset category will be subject to some degree of change as more detailed analysis and planning takes place and better estimates of the cost and time to complete each project are

developed. Additionally, some projects included in the LTIIP depend upon third-party actions or decisions, such as permitting, access to public rights-of-way, contractor or equipment availability or, in the case of highway relocations, construction plans by state, county and municipal governments that may not yet be developed or are subject to change. While these factors may affect the allocation of investment funds within or between the stated asset categories and may also affect the timing or prioritization of investments within the 2016-2010 term of the LTIIP, current expectations are that none of these factors will eliminate from the LTIIP an entire category of eligible property; extend the schedule for repair, improvement or replacement of a category of eligible property by more than two years; increase the total estimated cost of the LTIIP by more than 20%; or otherwise reflect a substantial change to the LTIIP as finally approved by the Commission. Accordingly, the possible changes to the LTIIP that might be required in the future should not constitute a "major modification" requiring West Penn to petition for approval of a modified Plan under Section 121.5 of the LTIIP regulations.

A. Identification of Types and Age of Property to be Improved, Repaired and Replaced

12. Section 121.3(a)(1) of the LTIIP regulations calls for the identification of the types and ages of the eligible property covered by the Plan. The descriptions in each asset category in Appendix A identify the type and age of the eligible property in that category. For example, the largest component by cost of West Penn's LTIIP is the line rehabilitation program, which will replace aging distribution facilities that were installed as early as the late 1940s and have an average age of between 20 and 30 years.

B. Initial Schedule for Planned Repair and Replacement of Eligible Property

13. In accordance with Section 121.3(a)(2) of the LTIIP regulations, West Penn's LTIIP includes schedules reflecting estimates, based on current information, of the expected years

when planned repairs and replacements of eligible property will be completed. The schedules are described on an individual program basis in Appendix A. Using West Penn's line rehabilitation program as an example, thirty-five to forty-five circuits are planned for 2016, sixty-five to seventy-five circuits are planned for 2017, thirty-five to forty-five circuits are planned for 2018, fifty-five to sixty-five circuits are planned for 2019, and fifty-five to sixty-five circuits are planned for 2020, for a total of two hundred forty-five to two hundred ninety-five circuits planned to be rehabilitated during the entire period from 2016 through 2020.

C. General Description of the Location of Eligible Property

14. The individual program or project descriptions identify the location of the affected eligible property by its location within an operating area demarcated by the applicable Company Operations Center. West Penn's line rehabilitation program, for example, shows a total of thirty-eight projects[9] in 2016 divided among operating areas covered by its Boyce Operations Center (10), Butler Operations Center (10), Charleroi Operations Center (10), Jeanette Operations Center (7) and Waynesboro Operations Center (1).

D. Estimate of Quantity of Eligible Property

15. The individual program or project descriptions also identify the quantity of the affected eligible property, with the degree of specificity that is possible and practical for the nature of the work involved, by each Company operating area, demarcated by its respective Operations Center.

E. Projected Annual Expenditures

16. Appendix A to West Penn's LTIIP contains a table showing the projected annual expenditures over the five-year term of the LTIIP. The table shows the total quantity of affected

[9] Each "project" consists of the rehabilitation of multiple circuits in a given geographic area.

eligible property, the average cost per unit of affected eligible property, the projected expenditures on a yearly basis for each of the individual programs for the five-year period, and the total projected expenditures for each program at the conclusion of the five-year period. The table also shows cumulative projected annual and total expenditures for all eligible distribution property. Information about expenditures for individual programs is also included in the sections describing those programs.

F. Acceleration of Infrastructure Improvement and Maintenance of Customer Service

17. Section 121.3(6) of the LTIIP regulations provides that an LTIIP should describe "the manner in which infrastructure replacement will be accelerated and how repair, improvement or replacement will ensure and maintain adequate, efficient, safe, reliable, and reasonable service to customers." West Penn's LTIIP reflects the Company's advancement and acceleration of its infrastructure repair and replacement programs designed to address aging infrastructure, and the Company expects to continue its investment in infrastructure at that accelerated pace over the five years of the LTIIP's term. The LTIIP explains why projects are being undertaken in terms of possible improvements that they are designed to make in customer service and reliability. For example, line rehabilitation is designed to help the Company improve reliability on circuits where outages could impact significant numbers of customers. West Penn will employ data-driven processes to prioritize the circuits that will be rehabilitated by, for example, analyzing a circuit's historical reliability performance and its ranking within the category of worst performing circuits, and will augment those analyses with information based on field inspections and other objectively determined factors that drive the need for rehabilitation.

18. In order to analyze the cost-effectiveness of individual programs, West Penn expects to routinely review the effectiveness of its programs based on their expected impact on

System Average Interruption Duration Index ("SAIDI") and System Average Interruption Frequency Index ("SAIFI") and their potential to reduce outage response costs, and will compare the value of those expected benefits to the costs of the program and/or individual projects within a program. The repair, reinforcement and replacement of aging distribution equipment and facilities covered by West Penn's LTIIP are designed to help the Company to reduce the frequency and duration of customer outages resulting from equipment failure, which otherwise would increase as the age of its infrastructure increases.

G. Workforce Management and Training Plan for Performance of Work in Cost Effective, Safe and Reliable Manner

19. Section 121.3(a)(7) of the LTIIP regulations requires utilities to include a workforce management and training plan as a part of an LTIIP. A comprehensive description of West Penn's programs for ensuring a qualified workforce is set forth in its LTIIP. For purposes of providing the information required for its LTIIP, West Penn's workforce is considered to include employees of West Penn and employees of various contractors that will be retained to work on LTIIP projects.

H. Description of the Utility's Outreach and Coordination Activities with Third Parties

20. In accordance with Section 121.3(a)(8) of the regulations, the LTIIP describes how the Company's plans to reach out to, and coordinate with, other utilities, the Pennsylvania Department of Transportation and local governments with respect to work to be performed pursuant to the LTIIP that might affect or implicate those entities' roadways or other property and their construction and maintenance schedules.

I. Estimated Implementation of West Penn's DSIC

21. The Company anticipates that, following Commission approval of its LTIIP, it will file a petition and proposed tariff to establish a DSIC to recover the fixed costs of the property

placed in service pursuant to its LTIIP, all of which constitutes "eligible property" as defined in Section 1351 of the Code. Based upon approval of its LTIIP within the 120-day review period established in the Final Implementation Order and a DSIC filing made shortly thereafter, the Company anticipates that, following Commission review and approval, its DSIC will become effective on or about September 1, 2016. Consistent with that schedule, the Company's initial DSIC rate will be calculated to recover the fixed costs of eligible property placed in service between May 1, 2016 and July 31, 2016. Thus, West Penn's initial DSIC rate will only include property placed in service after the last day of the fully projected future test year employed in the Company's most recent base rate case, which ends on April 30, 2016.[10]

III. CONCLUSION

WHEREFORE, for the reasons set forth above, West Penn Power Company requests that the Commission enter an order by the end of the 120-day review period finding and determining that its LTIIP: (1) satisfies all of the criteria set forth at 52 Pa. Code § 121.4(e)(1)-(4); (2) meets the legal standard set forth in Section 1352(a)(7) for approval of an LTIIP; and (3) therefore, should be approved without revision and without the need to refer this matter to the Office of Administrative Law Judge ("OALJ"). Additionally, if the Commission were to determine that comments, if any, submitted with respect to West Penn's LTIIP present material factual issues that merit assigning this case to the OALJ pursuant to the procedure outlined in the Final Implementation Order, the Company further requests that the Commission, at the time of such

[10] *See Pa. P.U.C. v. West Penn Power Company*, Docket No. R-2014-2428742 (Final Order entered April 9, 2015).

assignment, authorize West Penn to file written direct testimony to address such issues and other matters deemed relevant.

Respectfully submitted,

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Attorneys for
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Dated: October 19, 2015

DB1/ 84882142.1

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Petition of West Penn Power Company	:	
for Approval of its Long-Term	:	**Docket No. _____**
Infrastructure Improvement Plan	:	

VERIFICATION

I, Linda L. Moss, hereby state that I am President, Pennsylvania Operations, FirstEnergy Service Co., am authorized to submit this Verification on behalf of West Penn Power Company, that the facts set forth above in the Petition for Approval of its Long-Term Infrastructure Improvement Plan 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 a 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 falsifications to authorities.

Date: October 19, 2015

Linda L Moss

LINDA L. MOSS

West Penn Power Company

Exhibit No. 1

Long-Term Infrastructure Improvement Plan

Table of Contents

I. Introduction

Pursuant to the requirements of Subchapter B, Distribution Systems, of the Pennsylvania Public Utility Code, 66 Pa.C.S. §§ 1350-1360, and the Pennsylvania Public Utility Commission's ("PUC" or the "Commission") Final Implementation Order for Implementation of Act 11 of 2012, entered August 2, 2012, at Docket No. M-2012-2293611, and the Commission's regulations at 52 Pa. Code §§ 121.1-121.8, West Penn Power Company ("West Penn" or "Company") respectfully submits its Long-Term Infrastructure Improvement Plan ("LTIIP") for approval by the Commission.

West Penn is actively engaged and diligently committed to continuing to perform in a manner that results in satisfactory and cost effective reliability performance for its customers. Reliability indices such as System Average Interruption Frequency Index ("SAIFI"), Customer Average Interruption Duration Index ("CAIDI"), and System Average Interruption Duration Index ("SAIDI") indicate that West Penn has generally improved its system reliability metrics since February 2011 when West Penn's former parent, Allegheny Energy, Inc. ("Allegheny Energy"), merged with FirstEnergy (the "Merger"). The improvement that occurred between 2011 and 2014 was driven by an acceleration in reliability related capital expenditures that began shortly after West Penn joined the FirstEnergy system and continues today. However, an increasing trend in the number of equipment and line failures at West Penn continues to occur due to the aging of its infrastructure. West Penn has undertaken traditional means of cost recovery to support the accelerated spending levels implemented after the Merger and, to that end, filed an electric distribution base rate case in August 2014, which concluded with a complete settlement that was approved by the Commission in April 2015.[1]

The timely recovery of fixed costs is essential for West Penn to continue to invest in new reliability-related plant and equipment at the post-Merger pace experienced up to this point. Continuing to upgrade the distribution system at the faster rate West Penn achieved following the Merger is needed to support West Penn's efforts to enhance and modernize service to customers and maintain or improve overall system reliability and resiliency. The West Penn LTIIP aims to provide such reliability advancements and customer service improvements, and will position the Company to meet the needs and demands of its customers into the future.

II. Requirements of the LTIIP

52 Pa. Code § 121.3(a)(1). The descriptions of the fifteen infrastructure improvement initiatives set forth in Appendix A identify the types and ages of DSIC-eligible property in subsections captioned "Description" and "Age of Infrastructure."

52 Pa. Code § 121.3(a)(2). The table at the front of Appendix A, captioned "Summary Cost by Year," shows the planned expenditures, by year, for the period 2016-2020, as well as the total for that period, for each of the infrastructure improvement initiatives discussed in Appendix A.

[1] *Pa. Pub. Util. Comm'n v. West Penn Power Co.*, Docket No. R-2014-2428742 (Final Order entered April 9, 2015).

52 Pa. Code § 121.3(a)(3). The descriptions of each infrastructure improvement initiative in Appendix A set forth the general location of eligible property relating to each initiative in subsections titled "Anticipated Locations."

52 Pa. Code § 121.3(a)(4). Reasonable estimates of the quantity of eligible property to be improved or repaired are provided in the subsection titled "Schedule" in the description of each infrastructure improvement initiative in Appendix A.

52 Pa. Code § 121.3(a)(5). The projected annual expenditures and the manner in which West Penn expects to finance those expenditures are addressed in Section V, below. Additional detail concerning the expenditures by year is provided in Appendix A within the description of each infrastructure improvement initiative.

52 Pa. Code § 121.3(a)(6). A description of the manner in which the infrastructure repair, improvement, or replacement will be accelerated and how repair, improvement or replacement will ensure and maintain adequate, efficient, safe, reliable and reasonable service to customers is addressed in Sections III, V, and VIII, below.

52 Pa. Code § 121.3(a)(7). The workforce management and training programs in place for West Penn that are designed to ensure that it will have access to a qualified workforce to perform work under its LTIIP in a cost-effective, safe and reliable manner is described in Section VII, below.

52 Pa. Code § 121.3(a)(8). A description of how West Penn expects to reach out to, and coordinate with, other utilities, the Pennsylvania Department of Transportation and local governments regarding their planned maintenance/construction projects and roadways that may be impacted by the LTIIP is provided in Section VI, below.

III. Distribution Reliability

To reduce the likelihood of distribution line and equipment caused outages, West Penn follows the FirstEnergy Distribution Inspection & Maintenance Practices ("I&M").[2] These practices are intended to balance cost and benefit while preventing equipment and line failures. They also set forth schedules for regular inspection of distribution facilities. Specifically, distribution line capacitors and reclosers are inspected annually; overhead circuits and equipment are inspected on a six-year cycle; underground circuits and equipment are inspected on a five-year cycle; and wood pole ground-line inspections are performed on a twelve-year cycle. These inspections are an important source of information in determining the need for, and prioritizing, the repair, improvement or replacement of West Penn's distribution facilities

[2] Pursuant to § 57.198, every two years an electric distribution company shall file, and receive approval from the Commission of, a biennial plan for the periodic inspection, maintenance, repair and replacement of its facilities. On December 30, 2013, Paul Diskin, Director, Technical Utility Services, issued a letter approving the Company's biennial inspection, maintenance, repair, and replacement plan effective January 1, 2015 through December 31, 2016.

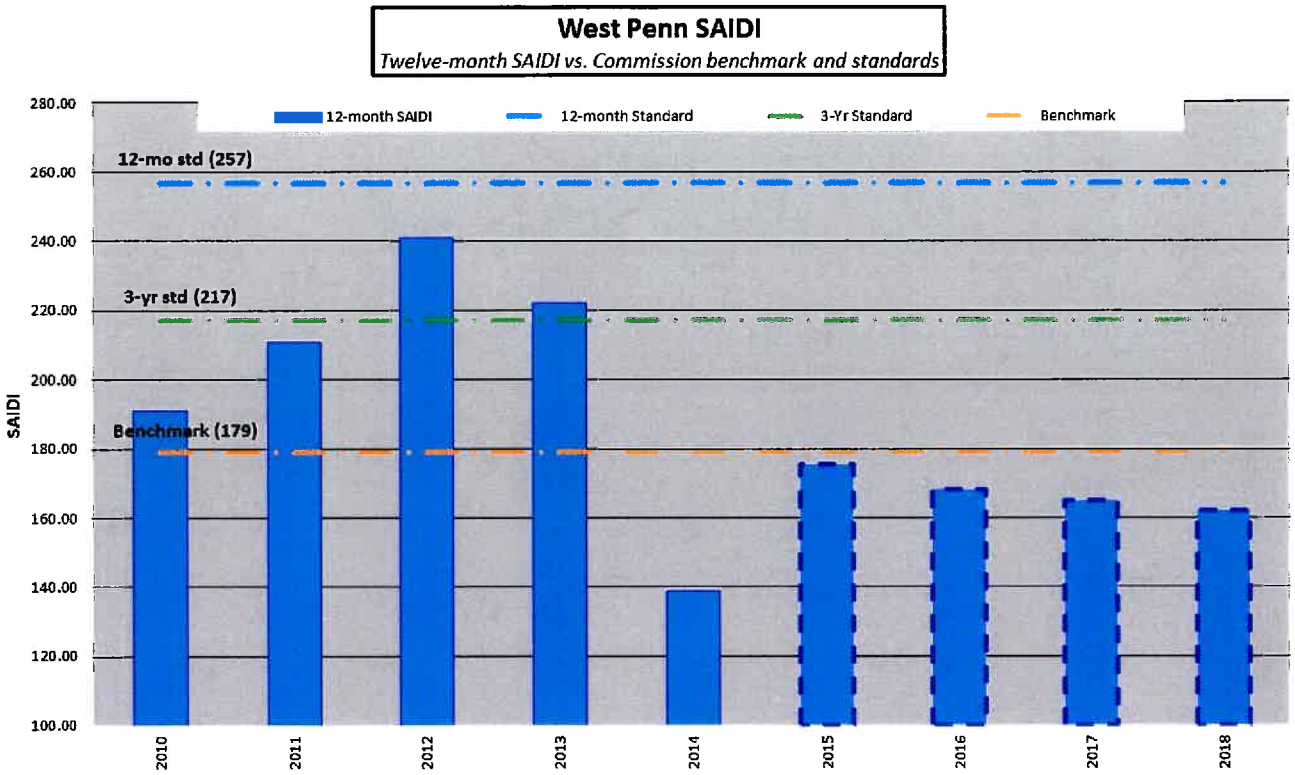
In addition to I&M, the Company also employs the FirstEnergy Substation Practices and Methods are employed to ensure the reliability and integrity of substation equipment, to safeguard employees and the public and to meet all state and federal regulatory requirements. FirstEnergy uses a combination of condition assessment and reliability evaluations to determine maintenance programs and intervals and to determine when substation equipment should be repaired or replaced. Condition assessment involves visual inspections, functional testing, diagnostic testing or any combination thereof. All major equipment is visually inspected periodically pursuant to West Penn's substation patrol inspection practice.

The work described above has been augmented by initiatives designed to improve overall reliability. Those initiatives included the introduction of a new vegetation management program which adopted a more aggressive five-year cycle; establishment of a danger tree program which included Emerald Ash Borer mitigation; zone one[3] circuit patrols; subtransmission aerial flyovers and subsequent hardware repairs; and large outage (over 250 customers interrupted) reviews. Those upgrades reduced both the number of customers impacted ("CI") and customer minutes interrupted ("CMI") during outages on West Penn's distribution system. Overall, West Penn's reliability performance has shown a steady improvement for SAIFI, SAIDI, and CAIDI, with reductions of approximately 28% for SAIFI, 34% for SAIDI and 9% for CAIDI.

If approved, the LTIIP is expected to promote additional reliability improvement by upgrading and modernizing the distribution system and, in that way enhancing service to customers. However, forecasting future reliability performance can be challenging, and reliability performance is largely influenced by weather experienced in a given year. Therefore, West Penn presents only the projected reliability performance through 2018. These values represent improvements based on historical reliability experience and the expected benefit to be derived from each project. These benefits can vary based on actual outages and the weather variability inherent in all reliability estimates. Figure 1 shows West Penn's SAIDI performance from 2010 through 2014 and also shows the estimated reliability improvement as a result of the LTIIP through 2018.

[3] Zone one is defined as the portion of the circuit from the substation breaker to the first protective device.

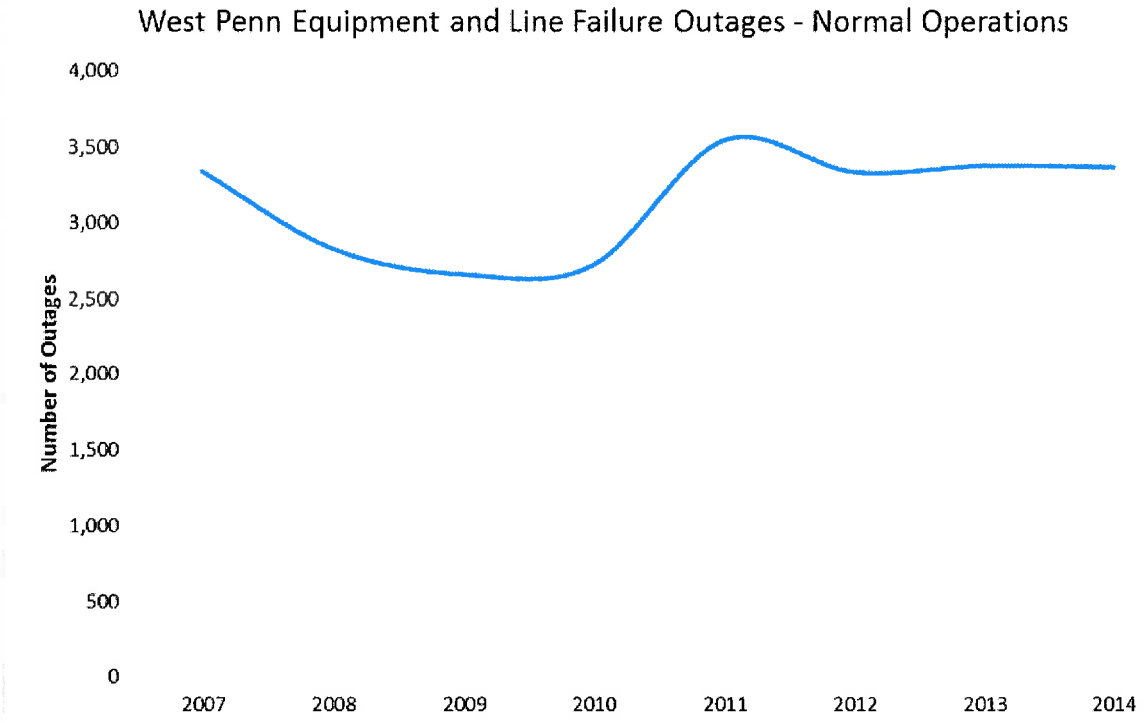
Figure 1. Historical and projected SAIDI performance



IV. The Need for the LTIIP

Despite routine inspection and maintenance and the recent improvements described above, equipment and line failures continue to place increased pressure on West Penn's ability to ensure adequate, efficient, and reliable service. Outages also increase unplanned work and operation and maintenance costs. Despite a dip in equipment and line failures during the time period of 2008 through 2010, equipment and line failures peaked in 2011 and stayed well above the 2008 through 2010 levels since 2011. Non-storm equipment failures, in particular, continue to be the largest contributor to outages at West Penn. West Penn's non-storm related equipment and line failures are graphed by year in Figure 2 below.

Figure 2. West Penn Historical Equipment and Line Failures



In order to address equipment and line failures, West Penn continuously performs focused and detailed reliability studies on distribution circuits to identify the causes of outages and to look for outage trends. Components that significantly contribute to an increasing trend include poles, reclosers, crossarms, porcelain cutouts[4], insulators, and transformers. The results of these studies were used to develop plans designed to improve the performance of the system as measured by SAIFI, SAIDI, and CAIDI, as discussed in more detail hereafter.

V. Implementation of the LTIIP

West Penn's LTIIP encompasses the five-year period from 2016 through 2020 and includes projects that are incremental to its typical capital investment. West Penn plans to finance the necessary capital by utilizing the timely recovery of invested funds through the DSIC mechanism. During the term of the LTIIP, West Penn projects spending an additional $88.34 million on programs and projects intended to improve reliability. This accelerated capital investment is inclusive of the Company's DSIC-qualifying projects contained in the implementation plan ("PA Management Audit Plan") submitted in response to ordering

[4] A cutout is a device that protects the distribution line or equipment from overloading. The device acts by melting an element during overloading or faults, and as the element melts, tension pulls the ends apart thus interrupting the circuit.

paragraphs 3 and 4 of the March 30, 2015 Pennsylvania Management Audit Order.[5] The projects and programs identified in the PA Management Audit Plan total $33.00 million. The LTIIP also includes an additional investment in reliability ("Additional Reliability Plan") improvements of $48.14 million. If performed in accordance with an approved LTIIP, the projects and programs identified in the PA Management Audit Plan and Additional Reliability Plan will accelerate replacement of obsolete or aging infrastructure in order to strengthen West Penn's distribution system (i.e., help to reduce outages); accelerate rehabilitation of Worst Performing Circuits; and will also accelerate system modernization and automation which will provide enhanced sectionalizing designed to reduce the number of customers impacted during an outage and restore them more quickly. Further, West Penn's PA Management Audit Plan facilitates the Company's goal of achieving benchmark-level performance for SAIFI, SAIDI, and CAIDI by year-end 2018. If performed in accordance with an approved LTIIP, the Additional Reliability Plan will work in conjunction with the PA Management Audit Plan to further support their common goal of achieving benchmark-level performance. Finally, the LTIIP includes approximately $7.20 million for unreimbursed costs related to government-required highway relocation projects.[6] As previously noted, the infrastructure improvement initiatives outlined above are described in more detail in Appendix A.

As previously explained, West Penn accelerated its investment in reliability-related plant and equipment following the consummation of the Merger in 2011. The LTIIP is designed to sustain an accelerated level investment. Although the Merger was completed in February 2011, the Allegheny Energy and FirstEnergy accounting systems were not consolidated until April 2012. Because of differences between the two accounting systems, financial data for West Penn are not available for 2010, 2011, and a portion of 2012 that identify utility plant in service on the same basis and for the same functional categories that FirstEnergy employs (and which West Penn began to employ after April 2012). As a result, it is not possible to make accurate comparisons of data between the pre-Merger period and periods after April 2012 that isolate and focus upon reliability-related plant additions. Consequently, West Penn is providing a comparison between total actual distribution plant additions by year for the five years immediately preceding the Merger (2006-2010), shown in Figure 3 below, and its projections of total distribution plant additions for the term of the LTIIP (2016-2020), shown in Figure 4 below. These data evidence the substantial acceleration in West Penn's investment in reliability plant and equipment since the completion of the Merger because West Penn's reliability-related investment was a significant part of the total annual plant additions during the post-Merger period.

[5] On March 30, 2015, the Pennsylvania Public Utility Commission issued an order directing Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company and West Penn Power Company to prepare and file a revised implementation plan relating to specific topics addressed in the report issued by the Commission's Bureau of Audits on February 12, 2015. Implementation Plan for the Focused Management Audit of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company and West Penn Power Company, Docket Nos. D-2013-2365991, D-2013-2365992, D-2013-2365993, D-2013-2365994.

[6] 66 Pa.C.S. § 1351 designates unreimbursed costs related to highway relocation projects where an electric distribution company must relocate its facilities as "eligible property."

Figure 3. West Penn's historic capital investment

Annual Expenditures (in millions of dollars)						
Category	**2006**	**2007**	**2008**	**2009**	**2010**	**Avg. Annual Spend**
Total Distribution Plant Additions	$52.15	$63.01	$59.61	$59.61	$57.23	**$58.32**

Figure 4. West Penn's planned capital investment

Annual Expenditures (in millions of dollars)						
Category	**2016**	**2017**	**2018**	**2019**	**2020**	**Avg. Annual Spend**
Total Distribution Plant Additions	$101.21	$96.74	$133.67	$114.72	$117.58	**$112.78**

*The entire budget for 2020 is not available, therefore, a 2.5% growth rate is assumed.

For the most part, the programs that were considered for inclusion in West Penn's LTIIP are those designed to have the greatest impact on reliability (in term of positive effect on customer service) per dollar spent. Additionally, in most cases, the programs included in the LTIIP were chosen to reduce the number of outages caused by aging equipment and lessen unplanned work and operation and maintenance costs. On an ongoing basis, projects will be prioritized to maximize the reliability and operating benefits to West Penn's customers. The effectiveness of the projects and programs that comprise the LTIIP will be reviewed periodically to determine that they remain prudent and cost-effective. Reliability and equipment failure trends will be analyzed on an ongoing basis as well to assess the impact of on-going investments. Thus, the Company will continuously review its plan and will assess the effectiveness of the identified projects and programs in relation to actual performance results. The Company may re-prioritize, alter completion dates, and add or remove projects based on ongoing engineering analyses to maximize the reliability and operating benefits to the affected circuits, while taking into consideration the overall impact to reliability and operational improvement and the costs and benefits to customers.

VI. Outreach and Coordination with Other Entities

West Penn communicates and coordinates with the Pennsylvania Department of Transportation ("PennDOT"), local governments, local municipalities, and other utilities and entities with regard to work that is scheduled to be performed that may affect the operations of those entities. Examples of communication and coordination efforts include press releases, public meetings, contact with local officials, and communication to customers who will experience a planned outage due to construction in their service area. However, most of the work that will be performed under West Penn's LTIIP will likely have minimal impact on these entities' work schedules. Because the possible impacts depend on the circumstances at the time work is actually being performed, specific project outreach plans are not currently available.

VII. Access to a Qualified Workforce

A. West Penn Workforce

The Company created Power Systems Institute ("PSI"), which is a unique, two-year program that combines classroom learning with the hands-on training needed to open the door to opportunities in the electric industry. The program was created as a way to help replace retiring line and substation employees. Upon completing the program, graduates will have a total of 1,280 hours of hands-on technical training as well as 60 hours of academic college credits. Graduates will earn an associate's degree and are classified as a mid-level line or substation worker. Qualified graduates are offered positions with the Company subject to the Company's standard hiring process.

It is the Company's practice to size its workforce to accommodate a steady state workload that includes day-to-day activity and a reasonable level of storm response as projected from historical averages. For those times when workload increases above steady-state levels, the Company is able to supplement its own resources by accessing a portfolio of affiliated resources[7] that may be able to move into the area to assist on a temporary basis. The Company also employs contractors to supplement regular status employees, particularly during construction of large capital projects.

In regard to training for qualified electrical workers, the Company adheres to the Occupational Safety and Health Administration ("OSHA") Regulation 29 CFR 1910.269 Electrical Power Generation, Transmission, and Distribution standard, American National Standards Institute, American Society for Testing Materials, and Institute of Electrical and Electronics Engineers standards. Training material leverages FirstEnergy work practices, procedures, construction standards, and the Accident Prevention Handbook.

Formal training is provided by the Workforce Development ("WFD") team. This group consist of full time instructors supplemented by contracted instructors who are generally retired craft workers. WFD develops, conducts, and evaluates knowledge and skills training for apprentices and incumbents.

Training is provided through varying methods, which consist of hands-on, classroom and on-the-job training. The curriculum is designed to support the employee's progression and includes a formalized skills demonstration program that allows for practice to gain proficiency in critical tasks. Finally, employees are required to complete progressive testing in a controlled setting to demonstrate skill proficiency prior to advancing within the craft line.

Formal and annual regulatory training mandated by agencies such as OSHA, the Department of Transportation, and the Environmental Protection Agency is managed within WFD, which

[7] FirstEnergy Corp.'s portfolio of operating companies includes not only those four located within the Commonwealth of Pennsylvania, but an additional six operating in other jurisdictions. The consistency in standards and work practices employed across all ten of these operating companies enables streamlined resource sharing in a way that promotes both safety and cost efficiency for those companies under this umbrella.

ensures that all employees complete the required training within the applicable timeframes. Interpretation of training revisions is managed with the assistance of FirstEnergy and FirstEnergy Utilities Safety Division. WFD maintains the integrity of all training materials and tracks completion to ensure compliance. All training adheres to FirstEnergy policies and procedures to ensure quality, consistency and accuracy.

B. Contractor Workforce

In the event that resources are necessary to supplement the Company's workforce, FirstEnergy's Utilities Sourcing Department employs its Contractor of Choice Program to ensure FirstEnergy secures a skilled labor force and specialized equipment in order to complete projects on schedule and at competitive market pricing. Under the Contractor of Choice Guidelines the FirstEnergy Utilities Sourcing Department will issue a Request for Proposal ("RFP") to a list of contractors who have a history of successfully completing projects safely, on schedule and at competitive market pricing. After a thorough bid clarification process with the contractors the responses to the RFP are evaluated by Engineering, Project Management and Supply Chain. A contractor is selected based on available manpower and equipment resources, understanding of project scope, constructability, management and safety oversight and pricing. A contractor is required to:

- Employ only persons known by the contractor to be experienced, qualified, reliable and trustworthy.
- Have in writing a series of safe work practices, procedures and programs pertinent to the work being done.

Upon completion of the work, a designated representative of the Company will evaluate the work performed by the contractor before final acceptance.

Supplier diversity is a core value inherent to all of the Company's business operations. Supporting diversity is an essential element to locating sources of materials and services, selecting suppliers and managing supplier and contractor relationships.

VIII. Summary

The proposed LTIIP is designed to allow West Penn to respond to equipment and line failures presently occurring across its system. Over the course of the last ten years, West Penn has made significant investments in its distribution system in the form of fuses, reclosers and switches to limit the scope of outages and improve response times. Despite these investments, West Penn continues to experience equipment and line failures as equipment continues to age and deteriorate. The proposed LTIIP will enable West Penn to address these conditions.

The reasonable, prudent and cost-effective investments set forth in West Penn's LTIIP accelerate the rate of infrastructure repair, improvement or replacement on its distribution system and are expected to enhance reliability by reducing the number and scope of outages and improving outage response times. These improvements should also better enable West Penn to achieve

work efficiencies by focusing on planned work instead of reacting to unplanned work. West Penn's LTIIP contains all of the elements required by 52 Pa. Code § 121.3(a). Accordingly, West Penn's LTIIP satisfies the criteria for Commission approval set forth in 52 Pa. Code § 121.4(e).

Appendix A

Summary Cost by Year

Infrastructure Improvement Initiative	Planned Annual Expenditures (in millions of dollars)					
	2016	2017	2018	2019	2020	Total
Total	**$17.36**	**$20.85**	**$15.45**	**$17.16**	**$17.52**	**$88.34**
Add Additional Circuit Phases	$0.12	$-	$-	$-	$-	**$0.12**
CEMI	$0.16	$0.16	$0.17	$0.17	$0.18	**$0.84**
Enhanced Overcurrent Protection	$3.53	$3.71	$2.47	$3.09	$3.09	**$15.89**
Enhanced WPC Remediation	$0.62	$0.62	$0.62	$0.62	$0.62	**$3.10**
Fuse Installation	$2.69	$2.70	$2.85	$2.94	$3.21	**$14.39**
Line Rehabilitation	$2.49	$4.30	$2.32	$3.72	$3.72	**$16.55**
Recloser Replacement	$0.28	$-	$-	$-	$-	**$0.28**
Replace Substation Batteries	$0.22	$0.23	$0.24	$0.24	$0.25	**$1.18**
Replace Substation Reclosers	$0.31	$0.32	$0.33	$0.35	$0.36	**$1.67**
Replace Transformer Arresters	$0.12	$0.12	$0.13	$0.13	$0.13	**$0.63**
Subtransmission Modernization and Automation	$2.95	$4.77	$2.96	$-	$-	**$10.68**
Underground Substation Exit Replacement	$0.62	$0.62	$-	$-	$-	**$1.24**
Unreimbursed Highway Relocation	$1.44	$1.44	$1.44	$1.44	$1.44	**$7.20**
URD Cable Replacement	$0.44	$0.45	$0.47	$1.72	$1.73	**$4.81**
Wood Pole Replacement	$1.37	$1.41	$1.45	$2.74	$2.79	**$9.76**

Add Additional Circuit Phases

Description
Convert a one-mile portion of the Vanceville circuit from single phase to three phase.

Identification and Justification
This program is designed reduce both SAIFI and CAIDI on the circuit, while improving the reliability performance of the circuit. When an outage occurs, fewer customers should be impacted.

Age of Infrastructure
The Vanceville circuit is approximately 85 years old.

Schedule

Planned Circuits					
2016	**2017**	**2018**	**2019**	**2020**	**Total**
1	-	-	-	-	**1**

Planned Annual Expenditures (in millions)

2016	2017	2018	2019	2020	Total
$0.12	$-	$-	$-	$-	**$0.12**

Anticipated Locations

Operations Center	Total
Charleroi	1
Total	**1**

Customers Experiencing Multiple Interruptions ("CEMI")

Description
Reliability improvements that focus on clusters of customers that experience frequent or repeated outages as well as other issues such as low voltage or momentary outages.

Identification and Justification
This program provides a means to reduce frequency of outages at the customer level that might not be otherwise addressed when targeting overall system metrics. Items that will be addressed include sustained outages, momentary outages, over voltage, low voltage, stray voltage, and flickering lights. Examples of projects that may be completed include replacing overhead conductor, reclosers, cutouts, or transformers, or installing fuses or animal guards. Circuits for this program will be selected based on the previous two-year period in which customers have experienced more than five interruptions.

Age of Infrastructure
In general, the age of the infrastructure will not be known until specific projects are identified.

Schedule

Planned CEMI Projects					
2016	**2017**	**2018**	**2019**	**2020**	**Total**
20-30	20-30	20-30	20-30	20-30	**100-150**

Planned Annual Expenditures (in millions)

2016	2017	2018	2019	2020	Total
$0.16	$0.16	$0.17	$0.17	$0.18	**$0.84**

Anticipated Locations
Locations for the program will be determined using the methodology detailed above.

Enhanced Overcurrent Protection

Description
Install new electronic reclosers with supervisory control and data acquisition ("SCADA") control at targeted substations.

Identification and Justification
West Penn will install new electronic reclosers with SCADA control which is designed to limit the number of customers affected during a lockout and allow dispatchers to remotely restore customers more quickly. Adding SCADA control to electronic reclosers in select substations with existing SCADA capabilities will provide better monitoring and also allow remote switching. Circuits will be selected based on past reliability performance, number of customers served, and SCADA availability. This program aims to improve reliability by reducing the number of customers affected per incident as well as reducing outage durations.

Age of Infrastructure
The work encompassed by this initiative involves the installation of new equipment designed to enhance or modernize service to customers. The infrastructure targeted for enhancement is not chosen based on age or condition but by reliability performance.

Schedule

Planned Recloser Installations					
2016	**2017**	**2018**	**2019**	**2020**	**Total**
25-30	28-32	18-22	23-27	23-27	**117-138**

Planned Annual Expenditures (in millions)

2016	2017	2018	2019	2020	Total
$3.53	$3.71	$2.47	$3.09	$3.09	**$15.89**

Anticipated Locations
Specific locations that have been identified for the 2016 program scope are detailed below. Locations for the program during the remaining years of the LTIIP will be determined using the methodology detailed above.

Operations Center	Total
Boyce	10
Butler	10
Charleroi	0
Jeannette	5
State College	0
Waynesboro	0
Total	**25**

Enhanced Worst Performing Circuit Rehabilitation

Description
This program will target worst performing circuits ("WPC") for enhanced rehabilitation which may include hardware rehabilitation, coordination review, installation of additional protective devices, or recloser installation.

Identification and Justification
West Penn will focus on strengthening zone one and zone two[8] by completing enhanced circuit rehabilitation on each of the identified WPC in order to maximize circuit reliability. The enhanced circuit rehabilitation for zone one and zone two will include a circuit inspection, hardware replacement for any deficiencies found, and additional fuse installations. The rehabilitation may also include circuit coordination, which could allow for the installation of an electronically controlled recloser which would enable SCADA control on the circuit, which will in turn enhance line protection. This program is designed to improve SAIFI, SAIDI, and CAIDI by both reducing the frequency of outages as well as the duration. Projects will be prioritized using the following criteria:

- Reliability history of the circuit (SAIDI, SAIFI, and CAIDI)
- Worst performing circuit status
- Field inspections

Age of Infrastructure
In general, the age of the equipment that will be replaced will not be known until it is identified through the inspection process; however, the work encompassed by this initiative involves the installation of new equipment designed to enhance or modernize service to customers.

Schedule

Planned Circuits for Rehabilitation					
2016	**2017**	**2018**	**2019**	**2020**	**Total**
6	6	6	6	6	**30**

Planned Annual Expenditures (in millions)

2016	2017	2018	2019	2020	Total
$0.62	$0.62	$0.62	$0.62	$0.62	**$3.10**

[8] Zone one is defined as the portion of the circuit from the substation breaker to the first protective device. Zone two is defined as the three phase conductor and devices after the first protective device.

Anticipated Locations

Specific locations that have been identified for the 2016 program scope are detailed below. Locations for the program during the remaining years of the LTIIP will be determined using the methodology detailed above.

Operations Center	Total
Charleroi	3
State College	1
Boyce	2
Total	**6**

Fuse Installation

Description
Install new fused cutouts on unprotected circuits.

Identification and Justification
Unfused line taps can cause circuit and recloser lockouts when the fault is located on a tap that is unfused. A coordination review will also be completed on the targeted circuits. Circuits for this program will be selected based on customer count, past reliability, and average customers per fuse. This program aims to improve SAIFI, SAIDI, and CAIDI by both reducing the frequency of outages as well as the duration.

Age of Infrastructure
The work encompassed by this initiative involves the installation new equipment designed to enhance or modernize service to customers. The average age of the circuits that will be upgraded is 83 years old. The infrastructure targeted for enhancement is not chosen based on age or condition but by reliability performance.

Schedule

Planned Fuse Installations					
2016	**2017**	**2018**	**2019**	**2020**	**Total**
60-80	60-80	60-80	60-80	60-80	**300-400**

Planned Annual Expenditures (in millions)

2016	2017	2018	2019	2020	Total
$2.69	$2.70	$2.85	$2.94	$3.21	**$14.39**

Anticipated Locations
Locations for the program will be determined using the methodology detailed above. The following locations are for the program year 2016.

Operations Center	Total
Boyce	8
Butler	22
Charleroi	18
Jeannette	7
State College	3
Waynesboro	4
Total	**62**

Line Rehabilitation

Description
Refurbish zone one and zone two of distribution circuits that have high SAIFI performance. Focus will be on circuits that have high rates of equipment and line failures and animal-caused outages.

Identification and Justification
Large impact distribution outages are caused when a fault occurs on a distribution circuit that has a significant number of customers. Faults can affect components including but not limited to cutouts, lightning arresters, crossarms, capacitors, reclosers, insulators, transformers, and connectors. To prevent these faults, circuit reviews will identify any equipment deficiencies and other opportunities to prevent outages. The number of items identified for replacement will vary based on circuit size and condition. Projects will be prioritized using the following criteria:

- Reliability history of the circuit (SAIDI, SAIFI, and CAIDI)
- Worst performing circuit status
- Field inspections

Age of Infrastructure
The components of these circuits have an average age of 20 to 30 years, though some of the components may have been installed in the late 1940s. In general, the age of the specific equipment that will be replaced will not be known until it is identified through the inspection process.

Schedule

Planned Circuits for Rehabilitation					
2016	**2017**	**2018**	**2019**	**2020**	**Total**
35-45	65-75	35-45	55-65	55-65	**245-295**

Planned Annual Expenditures (in millions)

2016	2017	2018	2019	2020	Total
$2.49	$4.30	$2.32	$3.72	$3.72	**$16.55**

Anticipated Locations

Specific locations that have been identified for the 2016 program scope are detailed below. Locations for the program during the remaining years of the LTIIP will be determined using the methodology detailed above.

Operations Center	Total
Boyce	10
Butler	10
Charleroi	10
Jeannette	7
State College	0
Waynesboro	1
Total	**38**

Recloser Replacement

Description
Replace all non-vacuum line reclosers that are nearing the end of their useful life on the McGovern circuit.

Identification and Justification
Non-vacuum circuit reclosers have a life that is determined by the number of operations and the level of fault current that it interrupts. West Penn will identify those reclosers that are nearing the end of their useful life and replace them to ensure continued circuit protection and reliability through minimized outage frequency and duration.

Age of Infrastructure
The average age of the reclosers that are targeted for replacement is more than ten years old.

Schedule

Planned Recloser Replacements					
2016	**2017**	**2018**	**2019**	**2020**	**Total**
1	-	-	-	-	**1**

Planned Annual Expenditures (in millions)

2016	2017	2018	2019	2020	Total
$0.28	$-	$-	$-	$-	**$0.28**

Anticipated Locations

Operations Center	Total
Washington	1
Total	**1**

Replace Substation Batteries

Description
Replace substation batteries that are nearing the end of useful life.

Identification and Justification
This program will provide for the replacement of substation batteries reaching the end of their useful life. If the batteries are not replaced, there is potential for mis-operation of substation equipment causing a possible outage. Battery replacements will be determined based on yearly test data showing increased failure probability.

Age of Infrastructure
The average age of the batteries that are targeted for replacement is more than 22 years old.

Schedule

Planned Battery Replacements					
2016	**2017**	**2018**	**2019**	**2020**	**Total**
6-10	6-10	6-10	6-10	6-10	**30-50**

Planned Annual Expenditures (in millions)

2016	2017	2018	2019	2020	Total
$0.22	$0.23	$0.24	$0.24	$0.25	**$1.18**

Anticipated Locations
Specific locations that have been identified for the 2016 and 2017 program scope are detailed below. Locations for the program during the remaining years of the LTIIP will be determined using the methodology detailed above.

Operations Center	Total
Butler	4
Charleroi	1
Jeannette	5
State College	2
Waynesboro	5
Total	**17**

Replace Substation Reclosers

Description
Replace substation reclosers that are nearing the end of useful life.

Identification and Justification
This program will provide for the replacement of substation reclosers that are nearing the end of their reliable operating life. This will ensure proper operation to clear line faults and work properly with upstream and down line equipment to prevent an unnecessary outage. Substation recloser replacements will be determined based on time in service and the number of operations.

Age of Infrastructure
In general, the age of the reclosers that will be replaced will not be known until it is identified through the inspection process; however the average age of all reclosers is 22 years old.

Schedule

Planned Recloser Replacements					
2016	**2017**	**2018**	**2019**	**2020**	**Total**
15	15	15	15	15	**75**

Planned Annual Expenditures (in millions)

2016	2017	2018	2019	2020	Total
$0.31	$0.32	$0.33	$0.35	$0.36	**$1.67**

Anticipated Locations
Locations for the program will be determined using the methodology detailed above.

Replace Transformer Arresters

Description
Replace porcelain silicon carbide arresters with polymer metal oxide varistor ("MOV") arresters on substation transformer banks.

Identification and Justification
This program will replace outdated silicon carbide arresters with new MOV arresters. The MOV arrester provides better protection to the transformer and are less likely to experience a catastrophic failure. By upgrading the units, there is a lower chance of a transformer outage which would affect a large number of customers. West Penn will prioritize replacement of transformer arresters based on historical performance and number of customers served from the transformer arrester.

Age of Infrastructure
Arresters are relatively small pieces of equipment the age of which is not typically tracked. However, generally, the transformer arresters that are targeted for replacement were installed before the 1980s.

Schedule

Planned Arrester Replacements					
2016	**2017**	**2018**	**2019**	**2020**	**Total**
25-30	25-30	25-30	25-30	25-30	**125-150**

Planned Annual Expenditures (in millions)

2016	2017	2018	2019	2020	Total
$0.12	$0.12	$0.13	$0.13	$0.13	**$0.63**

Anticipated Locations
Locations for the program will be determined using the methodology detailed above.

Subtransmission Modernization and Automation

Description
Replace aged electro-mechanical relay controls and switches on existing automated subtransmission switching locations with newer technology and add group-operated SCADA switches in areas where the automated switches are not feasible.

Identification and Justification
The installation of SCADA controlled reclosers and switches and automatic switch modernization will provide enhanced sectionalizing for larger blocks of customers at the substation source level. The SCADA controlled switches are designed to allow for remote switching to sectionalize and restore large blocks of customers more quickly, and should lead to reduced outage durations.

Age of Infrastructure
The relay controls targeted for replacement are generally older than ten years. The average life span is typically 40 years. The work encompassed by this initiative involves the installation of new equipment designed to enhance or modernize service to customers.

Schedule

Planned Reclosers and Switches					
2016	**2017**	**2018**	**2019**	**2020**	**Total**
45	65	45	-	-	**155**

Planned Annual Expenditures (in millions)

2016	2017	2018	2019	2020	Total
$2.95	$4.77	$2.96	$-	$-	**$10.68**

Anticipated Locations

Operations Center	Total
Boyce	15
Butler	36
Charleroi	37
Jeannette	32
State College	24
Waynesboro	11
Total	**155**

Underground Substation Exit Replacement

Description
Replace aging 12 kV underground substation exit cables.

Identification and Justification
The cable targeted for replacement was manufactured without an insulating jacket around the concentric neutral wires that are on the outside perimeter of the cable. The neutral conductors corrode prematurely and fail. The corroded concentric neutral of this early vintage underground conductor results in poor voltage quality and underground primary faults caused by unevenly stressed cable insulation. This program aims to reduce the interruptions (SAIFI) to a circuit associated with the cable as well as the long interruption times associated with the replacement (SAIDI).

Age of Infrastructure
The cable which will be targeted for replacement in this program was installed prior to 1988 and is generally 40 years or older in age.

Schedule

Planned Substation Exit Replacements					
2016	**2017**	**2018**	**2019**	**2020**	**Total**
10	10	-	-	-	**20**

Planned Annual Expenditures (in millions)

2016	2017	2018	2019	2020	Total
$0.62	$0.62	$-	$-	$-	**$1.24**

Anticipated Locations

Operations Center	Total
Boyce	4
Butler	3
Charleroi	5
Jeannette	5
Waynesboro	3
Total	**20**

Unreimbursed Highway Relocation

Description
Recover the unreimbursed costs of distribution facility relocations in support of highway and bridge construction projects.

Identification and Justification
Highway and bridge relocation and construction projects occur throughout the year and across the West Penn service territory. These projects are sponsored by PennDOT, as well as individual counties and municipalities. Reimbursement amounts are calculated based on PennDOT DM-5 manual guidelines. Historically West Penn collects 40% of the overall relocation costs from the entity making the request for equipment relocation.

Age of Infrastructure
The infrastructure targeted for relocation is not chosen based on age or condition but merely by its location. Despite that fact, replacement of infrastructure with newer equipment may result in reliability improvement.

Schedule

Average Number of Projects					
2016	**2017**	**2018**	**2019**	**2020**	**Total**
25-30	25-30	25-30	25-30	25-30	**125-150**

Planned Annual Expenditures (in millions)

2016	2017	2018	2019	2020	Total
$1.44	$1.44	$1.44	$1.44	$1.44	**$7.20**

Anticipated Locations
The location of the work varies and is driven by the construction schedules of PennDOT and the other government entities.

Underground Residential Distribution ("URD") Cable Replacement

Description
Replace bare concentric neutral primary voltage cable across the West Penn service territory.

Identification and Justification
The targeted type of cable was manufactured without an insulating jacket around the concentric neutral wires that are on the outside perimeter of the cable. The neutral conductors corrode and fail prematurely. The corrosion results in poor voltage quality and underground primary faults caused by unevenly stressed cable insulation. Replacement of this cable should reduce the length of customer outages (CAIDI) since the Company will no longer have to spend the extra time to locate a fault and make repairs to the degraded neutral conductors.

Age of Infrastructure
The URD cable which will be targeted for replacement in this program was installed prior to 1986.

Schedule

Planned Feet of Cable Replacement					
2016	**2017**	**2018**	**2019**	**2020**	**Total**
7,920	7,920	7,920	34,320	34,320	**92,400**

Planned Annual Expenditures (in millions)

2016	2017	2018	2019	2020	Total
$0.44	$0.45	$0.47	$1.72	$1.73	**$4.81**

Anticipated Locations

Operations Center	Total
Boyce	18,480
Butler	13,200
Charleroi	14,520
Jeannette	14,520
State College	18,480
Waynesboro	13,200
Total	**92,400**

Wood Pole Replacement

Description
Accelerate the replacement of poles identified as non-restorable during the annual West Penn distribution pole inspection process.

Identification and Justification
This program is the systematic replacement of wood poles that have been identified by a qualified inspector to have degraded beyond restorable condition (cannot be reinforced). These poles are identified during annual inspections of the distribution network. The program ultimately contributes to storm hardening efforts, and aims to improve public and employee safety as well as contribute to service reliability. West Penn inspects approximately 54,000 poles per year, from which a historical trend indicates a 0.5% rejection rate.

Age of Infrastructure
In general, the age of the poles that will be replaced is unknown until they are identified through the inspection process. The average age of all poles across West Penn is 39 years old.

Schedule

Planned Pole Replacements					
2016	**2017**	**2018**	**2019**	**2020**	**Total**
270	270	270	520	520	**1,850**

Planned Annual Expenditures (in millions)

2016	2017	2018	2019	2020	Total
$1.37	$1.41	$1.45	$2.74	$2.79	**$9.76**

Anticipated Locations
Project locations are directly linked to the distribution pole inspection plan and are identified yearly. West Penn will endeavor to combine construction activities with other programs identified elsewhere in this infrastructure improvement plan with wood pole replacements in order to maximize efficiencies and crew utilization.