PennPower
A FirstEnergy Company

2800 Pottsville Pike
P.O. Box 16001
Reading, PA 19612-6001

VIA OVERNIGHT MAIL

October 3, 2011

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
P.O. Box 3265
Harrisburg, PA 17120

M-2009-2094773

RE: Biennial Inspection, Maintenance, Repair and Replacement Plan – Pennsylvania Power Company for the period January 1, 2013 – December 31, 2014

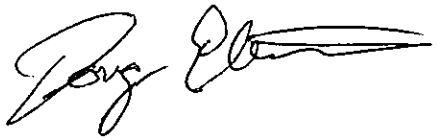
Dear Secretary Chiavetta:

In accordance with 52 Pa. Code § 57.198, enclosed for filing on behalf of Pennsylvania Power Company is an original and three (3) copies of its Biennial Inspection, Maintenance, Repair and Replacement Plan for the period January 1, 2013 – December 31, 2014.

This Plan is designed consistent with the guidelines established by the National Electric Safety Code, the Codes and Practices of the Institute of Electrical and Electronic Engineers, Federal Energy Regulatory Commission Regulations, and the American National Standards Institute, Inc. The Plan also has been designed to reduce the risk of outages on Penn Power's system and form the basis of its inspection and maintenance goals and objectives as outlined in Penn Power's annual and quarterly reliability reports filed with this Commission.

Pennsylvania Power Company respectfully requests that the Pennsylvania Public Utility Commission accept its Biennial Inspection, Maintenance, Repair and Replacement Plan. If you have any questions, please contact me or Eric Dickson at (330) 384-5970.

Sincerely,



Douglas S. Elliott
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Biennial Inspection, Maintenance, Repair and Replacement Plan of Pennsylvania Power Company ("Penn Power")

For the period of January 1, 2013 – December 31, 2014

Submitted by:
Douglas S. Elliott
President, Pennsylvania Operations
2800 Pottsville Pike
Reading, PA 16001
Email: elliottd@firstenergycorp.com

Dated: October 3, 2011

PennPower
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Revisions to Approved Plan

The Commission accepted Pennsylvania Power Company's ("Penn Power") current Biennial Inspection, Maintenance, Repair and Replacement Plan ("I&M Plan") for 2011 and 2012 on December 15, 2009. The table below illustrates, in summary fashion, the proposed changes to the 2013 and 2014 plan that differ from the 2011-2012 I&M Plan.

Penn Power *2011-2012 Plan*	**Penn Power** *Proposed Program (effective January 1, 2013)*
Distribution Overhead Line Inspections – page 5	
Visual inspection on a 5-year cycle	Visual inspection on a 6-year cycle
Distribution Transformer Inspections – page 7	
Overhead transformers – inspect as part of overhead line inspection (5-year cycle) Above-ground transformers – inspect on a 5-year cycle	Overhead transformers – inspect as part of overhead line inspection (6-year cycle) Above-ground transformers – inspect on 6-year cycle (to align with overhead transformer and line inspections)
Substation Inspections – page 11	
Inspect all substations 12 times annually	Inspections will consist of three components: 1. Monthly Safety & Security Inspection 2. Quarterly Safety and Security Inspection with Readings 3. Biannual Safety and Security Inspection with Full Inspection

In addition, pursuant to 52 Pa. Code § 57.198(l), Penn Power will be submitting a request as an addendum to its quarterly reliability report that will be filed on November 1, 2011 to modify the programs as set forth above with an effective date of January 1, 2012. The addendum will contain a discussion of the reasons for the revisions to its existing approved plan. Therefore, the changes being proposed to the 2011 - 2012 plan will be consistent with those modifications being proposed in the 2013-2014 plan submitted herein.

Section 57.198(n)(1). Vegetation Management. *The statewide minimum inspection and treatment cycle for vegetation management is between 4-8 years for distribution facilities. An EDC shall submit a condition-based plan for vegetation management for its distribution system facilities explaining its treatment cycle.*

Program Description

Penn Power performs vegetation management to help ensure the continued safe and reliable operation of the distribution system. The Standard Specification for vegetation management is designed to support line reliability, maintain access, make repairs, or restore service and to support safe and reliable service. The Standard vegetation specification provides vegetation to be pruned to achieve four (4) years of clearance, removal of selected incompatible trees within the clearing zone corridor, removal of certain defective limbs that are overhanging primary conductors, controlling selected incompatible brush mechanically and/or using herbicide, and removal of off-corridor priority trees that are dead, dying, diseased, and leaning or significantly encroaching the corridor.

Portions of a circuit that experience high customer interruption minutes due to vegetation-caused outages may be targeted to receive the Standard Specification as well as enhanced vegetation removal techniques, which includes removal of certain healthy limbs, based on tree species and condition, which overhang primary conductors.

For portions of a circuit that have not experienced significant reliability issues due to vegetation-caused outages, a proactive Inspect/Maintain process will target selective vegetation removal for continued reliable system operation. This may include the extension of a cycle which will not exceed eight (8) years. This process involves inspection of the vegetation to evaluate the extent of potential for vegetation to interfere with energized conductors. Factors to consider in the evaluation are the voltage and height of the conductor, the type of tree, its growth rate and branching habit. Trees that will impact safety or reliability will be maintained to the Standard Specification.

Methods used to manage and control vegetation include manual control methods using hand-operated tools, mechanical control using equipment mounted saws, mowers or other devices, and various herbicide application techniques such as, selective basal herbicide applications, stem foliage applications and cut stubble applications.

Further detailed information regarding Penn Power's vegetation management program may be found in FirstEnergy's Vegetation Management Program Description.

Inspection Plan

Area		Inspections and Treatments Planned *Total Circuit Miles* 2013	2014
Penn Power *4,557 total circuit miles*	Mercer *2,123 total circuit miles*	546	534
	New Castle *1,475 total circuit miles*	382	376
	Zelienople *959 total circuit miles*	230	230

Section 57.198(c). Time frames. *The plan must comply with the inspection and maintenance standards in subsection (n). A justification for the inspection and maintenance time frames selected shall be provided, even if the time frame falls within the intervals prescribed in subsection (n). However, an EDC may propose a plan that, for a given standard, uses intervals outside the Commission standard, provided that the deviation can be justified by the EDC's unique circumstances or a cost/benefit analysis to support an alternative approach that will support the level of reliability required by law.*

Justification

Distribution vegetation management activities are performed in accordance with the following:

- Generally accepted industry practices
- All routine vegetation clearing work is performed in compliance with ANSI Z133.1 and A-300 Standards and according to the requirements given by OSHA and the National Electrical Safety Code (NESC)

Section 57.198(n)(2). Pole Inspections. *Distribution poles shall be inspected at least as often as every 10 – 12 years except for the new southern yellow pine creosoted utility poles which shall be initially inspected within 25 years, then within 12 years annually after the initial inspection. Pole inspections must include:*

i. Drill tests at and below ground level
ii. A shell test
iii. Visual inspection for holes or evidence of insect infestation
iv. Visual inspection for evidence of unauthorized backfilling or excavation near the pole
v. Visual inspection for signs of lightning strikes
vi. A load calculation

Program Description

Penn Power shall visually inspect distribution wood poles on a twelve (12) year cycle. The purpose for inspecting distribution wood poles is to identify and repair unsafe conditions or conditions that may adversely affect service reliability or system performance, and to comply with the state regulatory agencies and the National Electrical Safety Code.

This preventative maintenance inspection for wood poles will include a visual inspection as well as hammer-sounding as needed. The inspection consists of the recording of abnormal conditions from the groundline to the top of the pole including but not limited to the following:

- Damage – broken or leaning
- Equipment – crossarms, insulators, conductors, oil leaking
- Testing for decayed internal wood

In addition to the visual inspection, poles showing incipient decay or poles that are thirty-five (35) years old or older will be bored to further assess the condition of the pole. This inspection consists of the recording of tests performed and abnormal conditions detected including but not limited to the following:

- Boring – testing for internal decay
- Verification of shell thickness

Further detailed information regarding Penn Power's inspection of wood poles may be found in the Distribution Inspection & Maintenance Practice – Wood Poles.

Inspection Plan

	Area	Pole Inspections Planned (Number of Poles) 2013	2014
Penn Power 128,007 total poles	Clark 60,793 total poles	5,000	5,000
	Zelienople 67,214 total poles	5,600	5,600

Section 57.198(n)(3). Inspection Failure. *If a pole fails the groundline inspection and shows dangerous conditions that are an immediate risk to public or employee safety or conditions affecting the integrity of the circuit, then the pole shall be replaced within 30 days of the date of inspection.*

Corrective Maintenance

Wood poles and supporting structures with recorded defects that Penn Power could expect to create an immediate risk to public or employee safety or affect the integrity of the circuit shall be repaired/replaced within 30 days. All remaining deficiencies will be prioritized on a case-by-case basis.

Section 57.198(c). Time frames. *The plan must comply with the inspection and maintenance standards set-forth in subsection (n). A justification for the inspection and maintenance time frames selected shall be provided, even if the time frame falls within the intervals prescribed in subsection (n). However, an EDC may propose a plan that, for a given standard, uses intervals outside the Commission standard, provided that the deviation can be justified by the EDC's unique circumstances or a cost/benefit analysis to support an alternative approach that will support the level of reliability required by law.*

Justification

The practice of performing wood pole inspections on a twelve (12) year cycle is based on accepted electric utility practices. National Electrical Safety Code (NESC) Rule 12.121.A states "*lines and equipment shall be inspected at such intervals as experience has shown to be necessary.*" A periodicity of twelve (12) years between inspections allows enough time for proper planning and remediation prior to any emergent problems having a negative impact on personal safety, equipment integrity or service reliability.

Section 57.198(n)(4). Distribution overhead line inspections. *Distribution lines shall be inspected by ground patrol a minimum of once every 1 – 2 years. A visual inspection must include checking for:*

i. Broken insulators
ii. Conditions that may adversely affect operation of the overhead distribution line
iii. Other conditions that may adversely affect operation of the overhead distribution line

Program Description

Penn Power shall visually inspect overhead lines and equipment on a six-year cycle. The purpose for inspecting overhead lines and equipment is to identify and repair unsafe conditions or conditions that may adversely affect service reliability, and to comply with the state regulatory agencies and the National Electrical Safety Code. This program shall be limited to overhead facilities.

Approximately one-sixth of all circuits will be inspected annually to levelize labor commitments and expenses. This preventative maintenance will consist of a visual inspection and recording of abnormal conditions including but not limited to the following types of overhead circuit equipment:

- Conductors (wire and cable) – excessive slack, condition, damage, clearances
- Supporting structures (wood poles) – deteriorated condition, sustained damage (lightning, vehicle, woodpecker holes)
- Pole hardware (including insulators) – condition, damage
- Guying – condition, damage
- Pole-mounted distribution equipment (including overhead transformers) – condition, damage

Further detailed information regarding Penn Power's inspection of Distribution Overhead Lines may be found in the Distribution Inspection & Maintenance Practice.

Inspection Plan

	Area	Overhead Line Inspections Planned (Number of Circuits) 2013	2014
Penn Power *178 total circuits*	Clark *59 total circuits*	13	9
	Zelienople *119 total circuits*	19	18

Section 57.198(n)(5). Inspection Failure. *If critical maintenance problems are found that affect the integrity of the circuits, they shall be repaired or replaced no later than 30 days from discovery.*

Corrective Maintenance

Supporting structures with recorded defects that Penn Power could reasonably expect to affect the integrity of the circuit shall be repaired/replaced within 30 days. All remaining deficiencies will be prioritized on a case-by-case basis.

Section 57.198(c). Time frames. *The plan must comply with the inspection and maintenance standards in subsection (n). A justification for the inspection and maintenance time frames selected shall be provided, even if the time frame falls within the intervals prescribed in subsection (n). However, an EDC may propose a plan that, for a given standard, uses intervals outside the Commission standard, provided that the deviation can be justified by the EDC's unique circumstances or a cost/benefit analysis to support an alternative approach that will support the level of reliability required by law.*

Justification

The practice of performing overhead line inspections on a six-year cycle is based on accepted electric utility practices. National Electrical Safety Code (NESC) Rule 12.121.A states "*lines and equipment shall be inspected at such intervals as experience has shown to be necessary.*" A periodicity of six (6) years between inspections has historically been utilized by West Penn Power Company and has proven to be successful in addressing emergent problems in a timely manner, allowing for proper planning and remediation prior to the emergent problem having a negative impact on personal safety, equipment integrity or service reliability. In addition to the cost analysis that Penn Power has completed, this experience does not justify the expense of an increased cycle.

In addition to an inspection every six years, Penn Power has a unique opportunities that allows Company personnel to view the overhead line facilities and identify any potential issues. Penn Power's overhead line inspection program coincides with other equipment inspections, such as the annual recloser inspections. In order to address specific reliability concerns and to assess some worst performing circuit performance, additional circuit assessments are performed in addition to Penn Power's six-year inspection program. Any emergent priority overhead line problems identified during these other inspections are addressed in a timely manner.

The periodicity in the aformentioned practice is a former Allegheny Energy practice that is being adopted by Penn Power as a result of the merger between FirstEnergy and Allegheny Energy.

Section 57.198(n)(6). Distribution transformer inspections. *Overhead distribution transformers shall be visually inspected as part of the distribution line inspection every 1 – 2 years. Above-ground pad-mounted transformers shall be inspected at least as often as every 5 years and below-ground transformers shall be inspected at least as often as every 8 years. An inspection must include checking for:*

i. Rust, dents or other evidence of contact
ii. Leaking oil
iii. Installation of fences or shrubbery that could adversely affect access to and operation of the transformer
iv. Unauthorized excavation or changes in grade near the transformer

Program Description

Penn Power visually inspects overhead distribution transformers as part of the overhead line inspection. Above-ground pad-mounted transformers are inspected on a six-year cycle and below-ground transformers are inspected on an eight-year cycle. The purpose for inspecting distribution transformers is to identify and repair unsafe conditions or conditions that may adversely affect service reliability, and to comply with the state regulatory agencies and the National Electrical Safety Code.

Overhead distribution transformers – visual inspection and recording of abnormal conditions including but not limited to the following:

- Equipment condition – oil leakage, arresters, rust, dents or evidence of contact

Above-ground pad-mounted equipment (transformers and switchgear) – inspection and recording of abnormal conditions including but not limited to the following:

- Equipment condition – oil leakage, cabinet damage, holes, washout
- Security – locking mechanisms
- Accessibility – as required for operation and maintenance purposes, including installation of fences or shrubbery that could adversely affect access to and operation of the transformer and unauthorized excavation or changes in grade near the transformer
- Warning labels – electrical hazard warning label and landscaping instructions notice

Below-ground transformers – visual inspection and recording of abnormal conditions including but not limited to the following:

- Accessibility – verify cover is secured
- Equipment condition – visually inspect baffle

Further detailed information regarding Penn Power's inspection of distribution transformers may be found in the Distribution Inspection & Maintenance Practice – Underground Equipment.

Inspection Plan

Area		Type	Transformer Inspections Planned (Total transformers) 2013	2014
Penn Power 61,580 total transformers	Clark 26,231 total transformers	Overhead Transformers 23,699 total transformers	3,500	4,100
		Above-Ground Pad-mounted 2,532 total transformers	421	411
		Below-Ground Transformers 0 transformers	0	0
	Zelienople 35,349 total transformers	Overhead Transformers 26,432 total transformers	4,600	4,000
		Above-Ground Pad-mounted 8,896 total transformers	1,481	1,482
		Below-Ground Transformers 21 total transformers	1	0

Section 57.198(c). Time frames. *The plan must comply with the inspection and maintenance standards in subsection (n). A justification for the inspection and maintenance time frames selected shall be provided, even if the time frame falls within the intervals prescribed in subsection (n). However, an EDC may propose a plan that, for a given standard, uses intervals outside the Commission standard, provided that the deviation can be justified by the EDC's unique circumstances or a cost/benefit analysis to support an alternative approach that will support the level of reliability required by law.*

Justification

The practice of performing distribution overhead transformer inspections as well as above-ground transformer inspections on a six-year cycle and below-ground transformers on an eight-year cycle is based on accepted electric utility practices and the experience of Penn Power. National Electrical Safety Code (NESC) Rule 12.121.A states *"lines and equipment shall be inspected at such intervals as experience has shown to be necessary."*

The aformentioned periodicity between inspections allows distribution overhead and above-ground transformers to be inspected in conjunction with the overhead circuit inspection which is on a 6-year cycle as well. The above periodicities between inspections have proven to be successful in addressing emergent problems in a timely manner, allowing for proper planning and remediation prior to the emergent problem having a negative impact on personal safety, equipment integrity or service reliability.

Section 57.198(n)(7). Recloser inspections. *Three-phase reclosers shall be inspected on a cycle of 8 years or less. Single-phase reclosers shall be inspected as part of the EDC's individual distribution line inspection plan.*

Program Description

Penn Power visually inspects distribution line reclosers annually. The purpose for inspecting distribution line reclosers is to identify and repair unsafe conditions or conditions that may adversely affect service reliability or system performance, and to comply with the state regulatory agencies and the National Electrical Safety Code.

The annual preventative maintenance consists of counter readings and the field inspection. The counter readings are obtained to assess system performance based on the number of operations. The field inspection includes but is not limited to the following:

- Type of recloser and current rating
- Counter reading
- Condition – rust, dents, physical damage, leaks, lightning damage
- Equipment – surge arresters, tank-ground connections, by-pass switches, control battery, pole
- Grounds – damage, condition

Further detailed information regarding Penn Power's inspection of reclosers may be found in the Distribution Inspection & Maintenance Practice – Line Reclosers.

Inspection Plan

Area		Type	Recloser Inspections Planned *Total number of Reclosers* 2013	2014
- Penn Power *750 total reclosers*	Clark *360 total reclosers*	Single Phase *348 total reclosers*	348	348
		Three Phase *12 total reclosers*	12	12
	Zelienople *390 total reclosers*	Single Phase *349 total reclosers*	349	349
		Three Phase *41 total reclosers*	41	41

Section 57.198(c). Time frames. *The plan must comply with the inspection and maintenance standards in subsection (n). A justification for the inspection and maintenance time frames selected shall be provided, even if the time frame falls within the intervals prescribed in subsection (n). However, an EDC may propose a plan that, for a given standard, uses intervals outside the Commission standard, provided that the deviation can be justified by the EDC's unique circumstances or a cost/benefit analysis to support an alternative approach that will support the level of reliability required by law.*

Justification

The practice of performing annual recloser inspections is based on accepted electric utility practices and the experience of Penn Power. National Electrical Safety Code (NESC) Rule 12.121.A states *"lines and equipment shall be inspected at such intervals as experience has shown to be necessary."* A periodicity of one year between inspections has proven to be successful in addressing emergent problems in a timely manner, allowing for proper planning and remediation prior to the emergent problem having a negative impact on personal safety, equipment integrity or service reliability.

Section 57.198(n)(8). Substation inspections. *Substation equipment, structures and hardware shall be inspected on a cycle of 5 weeks or less.*

Program Description

Penn Power's substation inspection program is composed of three components. The purpose of these inspections of the distribution substations is to verify the security of the substation, capture readings and to ensure that any developing substation problems are identified and addressed in a timely manner in support of system reliability and electrical safety.

These three components include:

1. Safety and Security Inspection (Class C) – monthly inspection and recording of abnormal conditions including but not limited to the following:
    - Substation control house (security breaches, roof integrity, fire protection equipment, general housekeeping)
    - Substation yard and perimeter (gate, fence, signage)

2. Safety and Security Inspection with Readings (Class B) – quarterly inspection and recording of abnormal conditions including but not limited to the following types of substation equipment:
    - Substation control house (security breaches, roof integrity, fire protection equipment, general housekeeping)
    - Substation yard and perimeter (gate, fence, signage)
    - Read and record currents, voltages, temperatures, pressures and operations counters on installed substation equipment

3. Safety and Security Inspection with Full Inspection (Class A) – a biannual visual inspection along with readings and a more comprehensive inspection and testing of the substation and including but not limited to the following types of substation equipment:
    - Substation control house (security breaches, roof integrity, fire protection equipment, general housekeeping)
    - Substation yard and perimeter (gate, fence, signage)
    - Read and record currents, voltages, temperatures, pressures and operations counters on installed substation equipment
    - Microwave/radio sites and engine generators, batteries and chargers
    - Relaying, power transformers, breakers, voltage regulators, capacitor banks, etc.

Further detailed information regarding Penn Power's inspection of substations may be found in the Substation Practice Manual.

Inspection Plan

Area		Substation Inspections Planned (Number of Substations) 2013	2014
Penn Power *80 total substations*	New Castle *80 total substations*	960	960

Section 57.198(c). Time frames. *The plan must comply with the inspection and maintenance standards in subsection (n). A justification for the inspection and maintenance time frames selected shall be provided, even if the time frame falls within the intervals prescribed in subsection (n). However, an EDC may propose a plan that, for a given standard, uses intervals outside the Commission standard, provided that the deviation can be justified by the EDC's unique circumstances or a cost/benefit analysis to support an alternative approach that will support the level of reliability required by law.*

Justification

The practice of performing substation inspections is based on accepted utility practices and the experience of Penn Power. Providing a trained, physical presence within the substation on a regular, periodic basis has proven very successful in detecting the degradation of facilities not always captured by existing local and remote surveillance and monitoring tools. A periodicity of one month between inspections has proven to be successful in addressing emergent problems in a timely manner, allowing for proper planning and remediation prior to the emergent problem having a negative impact on person safety, equipment integrity or service reliability.

This practice is a former Allegheny Energy practice that is being adopted by Penn Power as a result of the merger between FirstEnergy and Allegheny Energy.

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