

September 14, 2009

Ms. Renee J. Jenkins  
Director, Administration Department  
Secretary to the Commission  
Docketing Division  
The Public Utilities Commission of Ohio  
180 Broad Street  
Columbus, OH 43215-3793

Ms. Doris McCarter  
Director, Service Monitoring and Enforcement Department  
Public Utilities Commission of Ohio  
180 East Broad Street  
Columbus, Ohio 43215-3793

**Re: Ohio Edison Company, The Cleveland Electric Illuminating Company, The Toledo Edison Company and American Transmission Systems, Inc. (collectively, the "Companies") programs for inspection, maintenance, repair, and replacement of transmission and distribution circuits and equipment required under O.A.C. 4901:1-10-27(E); and requests for revisions and amendments to that program pursuant to O.A.C. 4901:1-10-27(F).**

Dear Ms. Jenkins and Ms. McCarter:

Enclosed for filing, please find the Companies' programs for inspection, maintenance, repair, and replacement of transmission and distribution circuits and equipment as required under O.A.C. 4901:1-10-27(E).

Pursuant to O.A.C. 4901:1-10-27(F), the Companies have requested (i) minor modifications to their padmount transformers, wood poles, and line reclosers programs, such modifications are highlighted within such programs, and (ii) a complete revision to their distribution vegetation management programs. The Companies made a number of other formatting changes to their existing programs; however, such programs remain substantively the same.

Should you have any questions, please feel free to call me at 330-384-5969.

Very truly yours,



Ebony L. Miller

Enclosures

Ohio Edison Company ("Ohio Edison")

Inspection, Maintenance, Repair and Replacement  
Programs

Program Description

Pursuant to Ohio Administrative Code (“O.A.C.”) 4901:1-10-27(D)(1) and 4901:1-10-27(E)(1)(b), Ohio Edison Company (“Ohio Edison”) shall visually inspect overhead circuit lines and equipment on a five-year cycle. The purpose for inspecting overhead circuit 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 the overhead facilities.

Approximately one-fifth 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 pole) – deteriorated condition, sustained damage (lightning, vehicle, woodpecker holes)
- Pole hardware – condition, damage
- Guying – condition, damage
- Pole-mounted distribution equipment – condition, damage

Corrective Maintenance

Supporting structures with recorded defects that Ohio Edison could reasonably expect to endanger life or property shall be promptly repaired, disconnected, or isolated. Deficiencies likely to cause an outage shall be corrected within one year of the completion of the inspection that originally revealed such deficiencies as required by O.A.C. 4901:1-10-27(E)(4). Corrective maintenance of a deficiency identified by Ohio Edison may include repair or replacement. Items found that are not likely to cause an outage will be evaluated and prioritized on a case-by-case basis.

Justification

Pursuant to O.A.C. 4901:1-10-27(E)(2), the practice of performing overhead circuit and equipment inspections on a five-year cycle is based on accepted electric utility practices and the experience of Ohio Edison. 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 five years 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.

Program Description

Pursuant to Ohio Administrative Code (“O.A.C.”) 4901:1-10-27(E)(1)(c), Ohio Edison Company (“Ohio Edison”) hereby requests to modify its current distribution underground equipment program. Ohio Edison’s current approved program calls for a security and complete field inspection of all pad-mounted equipment. Ohio Edison’s modified program shall visually inspect distribution underground equipment (i.e., pad-mounted transformers and switchgear and secondary enclosures including pedestals and handholes) on a five-year cycle. The purpose for inspecting distribution underground equipment is to identify and repair unsafe conditions or conditions that may adversely affect service reliability and electrical safety.

The preventative maintenance inspection shall include the visual inspection of the condition and security of underground equipment.

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
- Warning labels – electrical hazard warning label and landscaping instructions notice

Handholes and Pedestals – inspection and recording of abnormal conditions including but not limited to the following:

- Equipment condition – holes and washout
- Security – locking mechanisms

Corrective Maintenance

Equipment with recorded defects that Ohio Edison could reasonably expect to endanger life or property shall be promptly repaired, disconnected, or isolated. Deficiencies likely to cause an outage shall be corrected within one year of the completion of the inspection that originally revealed such deficiencies as required by O.A.C. 4901:1-10-27(E)(4). Corrective maintenance of a deficiency identified by Ohio Edison may include repair or replacement. Items found that are not likely to cause an outage will be evaluated and prioritized on a case-by-case basis.

Justification

Pursuant to O.A.C. 4901:1-10-27(E)(2), the practice of performing distribution underground equipment inspections on a five-year cycle is based on accepted electric utility practices and the experience of Ohio Edison. 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 five years 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.

#### Program Description

Pursuant to Ohio Administrative Code ("O.A.C.") 4901:1-10-27(E)(1)(e), Ohio Edison Company ("Ohio Edison") visually inspects distribution overhead line capacitors annually. The purpose for inspecting distribution line capacitors 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 shall be divided into two parts; a visual inspection (for both fixed and switched banks) and an operational test (switched banks only). The inspection consists of the recording of abnormal conditions including but not limited to the following types of distribution line capacitor equipment:

- Bank oil/vacuum switches –operational test (switched-bank only)
- Case - damage, bulging, leaking, rust
- Bushings - damage, signs of tracking, cracking or lightning strike
- Mounting brackets – cracked, bent, broken
- Pole and Equipment racks – damage or appreciable rust
- Grounds – damage, corrosion
- Protective equipment – cutouts, surge arrestors

#### Corrective Maintenance

Capacitors and supporting structures with recorded defects that Ohio Edison could reasonably expect to endanger life or property shall be promptly repaired, disconnected, or isolated. Deficiencies likely to cause an outage shall be corrected within one year of the completion of the inspection that originally revealed such deficiencies as required by O.A.C. 4901:1-10-27(E)(4). Corrective maintenance of a deficiency identified by Ohio Edison may include repair or replacement. Items found that are not likely to cause an outage will be evaluated and prioritized on a case-by-case basis.

#### Justification

Pursuant to O.A.C. 4901:1-10-27(E)(2), the practice of performing annual capacitor inspections is based on accepted electric utility practices and the experience of Ohio Edison. 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.

Program Description

Pursuant to Ohio Administrative Code (“O.A.C.”) 4901:1-10-27(E)(1)(d), Ohio Edison Company (“Ohio Edison”) hereby requests to modify its current distribution line recloser program. Ohio Edison’s current approved program calls for quarterly counter readings as well as an annual field inspection. Ohio Edison’s modified programs calls for a visual inspection of 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 momentary outages. The field inspection includes but is not limited to the following:

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

Corrective Maintenance

Reclosers and supporting structures with recorded defects that Ohio Edison could reasonably expect to endanger life or property shall be promptly repaired, disconnected, or isolated. Deficiencies likely to cause an outage shall be corrected within one year of the completion of the inspection that originally revealed such deficiencies as required by O.A.C. 4901:1-10-27(E)(4). Corrective maintenance of a deficiency identified by Ohio Edison may include repair or replacement. Items found that are not likely to cause an outage will be evaluated and prioritized on a case-by-case basis.

Justification

Pursuant to O.A.C. 4901:1-10-27(E)(2), the practice of performing annual recloser inspections is based on accepted electric utility practices and the experience of Ohio Edison. 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 as well as quarterly counter readings 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.

Program Description

Pursuant to Ohio Administrative Code (“O.A.C.”) 4901:1-10-27(E)(1)(a), Ohio Edison Company (“Ohio Edison”) hereby requests to modify its current distribution wood pole groundline inspection program. Ohio Edison’s current approved program may include a partial excavation on poles thirty-five (35) years old or older. Ohio Edison’s modified program requires a visual inspection of distribution wood poles on a ten-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. In addition, if any pole has indication of incipient decay or the pole is thirty-five (35) years or older, pole boring shall be performed to further assess the condition of the pole.

All poles will be visually inspected on a ten-year cycle. 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, leaking
- Testing for decayed internal wood

In addition to the visual inspection, poles showing incipient decay or poles that are thirty-five (35) year 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
- Verify shell thickness

Corrective Maintenance

Wood poles and supporting structures with recorded defects that Ohio Edison could reasonably expect to endanger life or property shall be promptly repaired, disconnected, or isolated. All remaining deficiencies likely to cause an outage shall be corrected within one year of the completion of the inspection that originally revealed such deficiencies as required by O.A.C. 4901:1-10-27(E)(4). Corrective maintenance of a deficiency identified by Ohio Edison may include repair or replacement. Items not likely to cause an outage will be evaluated and prioritized on a case-by-case basis.



Justification

Pursuant to O.A.C. 4901:1-10-27(E)(2), the practice of performing wood pole inspections on a ten-year cycle is based on accepted electric utility practices and the experience of Ohio Edison. 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 ten years 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.



Program Description

Pursuant to Ohio Administrative Code ("O.A.C.") 4901:1-10-27(D)(3) and 4901:1-10-27(E)(1)(g), Ohio Edison Company ("Ohio Edison") inspects its distribution substations twelve times annually, with no inspection interval to exceed forty calendar days between inspections. The purpose of these monthly inspections of the distribution substations is to capture monthly 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.

Each monthly preventative maintenance inspection consists of two groups of related tasks, monthly readings and the patrol inspection.

1. Monthly Readings
  - Read and record currents, voltages, temperatures, pressures and operations counters on installed substation equipment
2. Patrol Inspection - 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)
  - Substation major equipment (power transformers, circuit breakers, instrument transformers)
  - Batteries and chargers
  - Relays

Corrective Maintenance

Equipment with recorded defects that Ohio Edison could reasonably expect to endanger life or property shall be promptly repaired, disconnected, or isolated. Deficiencies likely to cause an outage shall be corrected within one year of the completion of the inspection that originally revealed such deficiencies as required by O.A.C. 4901:1-10-27(E)(4). Corrective maintenance of a deficiency identified by Ohio Edison may include repair or replacement. Items found that are not likely to cause an outage will be evaluated and prioritized on a case-by-case basis.

Justification

Pursuant to O.A.C. 4901:1-10-27(E)(2), the practice of performing monthly substation inspections is based on accepted electric utility practices and the experience of Ohio Edison. 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 personal safety, equipment integrity or service reliability.

#### Program Description

Pursuant to Ohio Administrative Code ("O.A.C") 4901:1-10-27(E)(1)(f), Ohio Edison Company ("Ohio Edison") 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. Ohio Edison's currently approved vegetation specification provides vegetation to be pruned to achieve 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 a primary voltage interruption due to a vegetation-caused outage over the period of a 4 year cycle (subject to the levelization process), a proactive Inspect/Maintain process will target selective vegetation removal for continued reliable system operation. 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.

The Inspect/Maintain Specification may be utilized to levelize Ohio Edison's circuits over the period 2010-2013. This levelization process is necessary due to a disproportionate workload associated with the circuits scheduled for maintenance in certain years. The levelization process enables Ohio Edison to make responsible vegetation management decisions, without an impact to the safe and reliable performance of the distribution system, when shifting work from one calendar year to the next, and could also be used on circuits designated for Enhanced or Standard Specification work processes. Ohio Edison plans to complete the levelization by the end of 2013.

#### Corrective Maintenance

Corrective maintenance 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.

Justification

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

- Applicable statutory law and regulations.
- 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).

Nothing in this Vegetation Management Program, the Company's Contractor Guidelines or the Commission rules and regulations is intended to limit or modify the grant of legal rights to the Company under a right-of-way or easement. To the extent that a question arises regarding the legal rights, including the existence and scope of easements and right-of-ways, such questions remain in the exclusive jurisdiction of a court of law.

The Cleveland Electric Illuminating Company ("CEI")

Inspection, Maintenance, Repair and Replacement  
Programs

## **Distribution Overhead Circuits & Equipment Inspection, Maintenance, Repair and Replacement Program**

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### Program Description

Pursuant to Ohio Administrative Code (“O.A.C.”) 4901:1-10-27(D)(1) and 4901:1-10-27(E)(1)(b), The Cleveland Electric Illuminating Company (“CEI”) shall visually inspect overhead circuit lines and equipment on a five-year cycle. The purpose for inspecting overhead circuit 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 the overhead facilities.

Approximately one-fifth 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 pole) – deteriorated condition, sustained damage (lightning, vehicle, woodpecker holes)
- Pole hardware – condition, damage
- Guying – condition, damage
- Pole-mounted distribution equipment – condition, damage

### Corrective Maintenance

Supporting structures with recorded defects that CEI could reasonably expect to endanger life or property shall be promptly repaired, disconnected, or isolated. Deficiencies likely to cause an outage shall be corrected within one year of the completion of the inspection that originally revealed such deficiencies as required by O.A.C. 4901:1-10-27(E)(4). Corrective maintenance of a deficiency identified by CEI may include repair or replacement. Items found that are not likely to cause an outage will be evaluated and prioritized on a case-by-case basis.

### Justification

Pursuant to O.A.C. 4901:1-10-27(E)(2), the practice of performing overhead circuit and equipment inspections on a five-year cycle is based on accepted electric utility practices and the experience of CEI. 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 five years 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.

## **Distribution Primary & Secondary Enclosures Inspection, Maintenance, Repair and Replacement Program**

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### Program Description

Pursuant to Ohio Administrative Code ("O.A.C.") 4901:1-10-27(E)(1)(c), The Cleveland Electric Illuminating Company ("CEI") hereby requests to modify its current distribution underground equipment program. CEI's current approved program calls for a security and complete field inspection of all pad-mounted equipment. CEI's modified program calls for a visual inspection of distribution underground equipment (i.e., pad-mounted transformers and switchgear and secondary enclosures including pedestals and handholes) on a five-year cycle. The purpose for inspecting distribution underground equipment is to identify and repair unsafe conditions or conditions that may adversely affect service reliability and electrical safety.

The preventative maintenance inspection shall include the visual inspection of the condition and security of underground equipment.

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
- Warning labels – electrical hazard warning label and landscaping instructions notice

Handholes and Pedestals – inspection and recording of abnormal conditions including but not limited to the following:

- Equipment condition – holes and washout
- Security – locking mechanisms

### Corrective Maintenance

Equipment with recorded defects that CEI could reasonably expect to endanger life or property shall be promptly repaired, disconnected, or isolated. Deficiencies likely to cause an outage shall be corrected within one year of the completion of the inspection that originally revealed such deficiencies as required by O.A.C. 4901:1-10-27(E)(4). Corrective maintenance of a deficiency identified by CEI may include repair or replacement. Items found that are not likely to cause an outage will be evaluated and prioritized on a case-by-case basis.

### Justification

Pursuant to O.A.C. 4901:1-10-27(E)(2), the practice of performing distribution underground equipment inspections on a five-year cycle is based on accepted electric utility practices and the experience of CEI. 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 five years 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.

## **Distribution Line Capacitor Inspection, Maintenance, Repair and Replacement Program**

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### Program Description

Pursuant to Ohio Administrative Code ("O.A.C.") 4901:1-10-27(E)(1)(e), The Cleveland Electric Illuminating Company ("CEI") visually inspects distribution overhead line capacitors annually. The purpose for inspecting distribution line capacitors 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 shall be divided into two parts; a visual inspection (for both fixed and switched banks) and an operational test (switched banks only). The inspection consists of the recording of abnormal conditions including but not limited to the following types of distribution line capacitor equipment:

- Bank oil/vacuum switches –operational test (switched-bank only)
- Case - damage, bulging, leaking, rust
- Bushings - damage, signs of tracking, cracking or lightning strike
- Mounting brackets – cracked, bent, broken
- Pole and Equipment racks – damage or appreciable rust
- Grounds – damage, corrosion
- Protective equipment – cutouts, surge arrestors

### Corrective Maintenance

Capacitors and supporting structures with recorded defects that CEI could reasonably expect to endanger life or property shall be promptly repaired, disconnected, or isolated. Deficiencies likely to cause an outage shall be corrected within one year of the completion of the inspection that originally revealed such deficiencies as required by O.A.C. 4901:1-10-27(E)(4). Corrective maintenance of a deficiency identified by CEI may include repair or replacement. Items found that are not likely to cause an outage will be evaluated and prioritized on a case-by-case basis.

### Justification

Pursuant to O.A.C. 4901:1-10-27(E)(2), the practice of performing annual capacitor inspections is based on accepted electric utility practices and the experience of CEI. 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.



## **Distribution Line Recloser Inspection, Maintenance, Repair and Replacement Program**

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### Program Description

Pursuant to Ohio Administrative Code (“O.A.C.”) 4901:1-10-27(E)(1)(d), The Cleveland Electric Illuminating Company (“CEI”) hereby requests to modify its current distribution line recloser program. CEI’s current approved program calls for quarterly counter readings as well as an annual field inspection. CEI’s modified program calls for a visual inspection of 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 momentary outages. The field inspection includes but is not limited to the following:

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

### Corrective Maintenance

Reclosers and supporting structures with recorded defects that CEI could reasonably expect to endanger life or property shall be promptly repaired, disconnected, or isolated. Deficiencies likely to cause an outage shall be corrected within one year of the completion of the inspection that originally revealed such deficiencies as required by O.A.C. 4901:1-10-27(E)(4). Corrective maintenance of a deficiency identified by CEI may include repair or replacement. Items found that are not likely to cause an outage will be evaluated and prioritized on a case-by-case basis.

### Justification

Pursuant to O.A.C. 4901:1-10-27(E)(2), the practice of performing annual recloser inspections is based on accepted electric utility practices and the experience of CEI. 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 as well as quarterly counter readings 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.

## **Distribution Wood Pole Groundline Inspection, Maintenance, Repair and Replacement Program**

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### Program Description

Pursuant to Ohio Administrative Code ("O.A.C.") 4901:1-10-27(E)(1)(a), The Cleveland Electric Illuminating Company ("CEI") hereby requests to modify its current distribution wood pole groundline inspection program. CEI's current approved program may include a partial excavation on poles thirty-five (35) years old or older. CEI's modified program requires a visual inspection of distribution wood poles on a ten-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. In addition, if any pole has indication of incipient decay or the pole is thirty-five (35) years or older, pole boring shall be performed to further assess the condition of the pole.

All poles will be visually inspected on a ten-year cycle. 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, leaking
- Testing for decayed internal wood

In addition to the visual inspection, poles showing incipient decay or poles that are thirty-five (35) year 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
- Verify shell thickness

### Corrective Maintenance

Wood poles and supporting structures with recorded defects that CEI could reasonably expect to endanger life or property shall be promptly repaired, disconnected, or isolated. All remaining deficiencies likely to cause an outage shall be corrected within one year of the completion of the inspection that originally revealed such deficiencies as required by O.A.C. 4901:1-10-27(E)(4). Corrective maintenance of a deficiency identified by CEI may include repair or replacement. Items not likely to cause an outage will be evaluated and prioritized on a case-by-case basis.

Justification

Pursuant to O.A.C. 4901:1-10-27(E)(2), the practice of performing wood pole inspections on a ten-year cycle is based on accepted electric utility practices and the experience of CEI. 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 ten years 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.

## **Distribution Substation Inspection, Maintenance, Repair and Replacement Program**

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### Program Description

Pursuant to Ohio Administrative Code ("O.A.C.") 4901:1-10-27(D)(3) and 4901:1-10-27(E)(1)(g), The Cleveland Electric Illuminating Company ("CEI") inspects its distribution substations twelve times annually, with no inspection interval to exceed forty calendar days between inspections. The purpose of these monthly inspections of the distribution substations is to capture monthly 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.

Each monthly preventative maintenance inspection consists of two groups of related tasks, monthly readings and the patrol inspection.

1. Monthly Readings
  - Read and record currents, voltages, temperatures, pressures and operations counters on installed substation equipment
2. Patrol Inspection - 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)
  - Substation major equipment (power transformers, circuit breakers, instrument transformers)
  - Batteries and chargers
  - Relays

### Corrective Maintenance

Equipment with recorded defects that CEI could reasonably expect to endanger life or property shall be promptly repaired, disconnected, or isolated. Deficiencies likely to cause an outage shall be corrected within one year of the completion of the inspection that originally revealed such deficiencies as required by O.A.C. 4901:1-10-27(E)(4). Corrective maintenance of a deficiency identified by CEI may include repair or replacement. Items found that are not likely to cause an outage will be evaluated and prioritized on a case-by-case basis.

### Justification

Pursuant to O.A.C. 4901:1-10-27(E)(2), the practice of performing monthly substation inspections is based on accepted electric utility practices and the experience of CEI. 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 personal safety, equipment integrity or service reliability.

### Program Description

Pursuant to Ohio Administrative Code ("O.A.C") 4901:1-10-27(E)(1)(f), The Cleveland Electric Illuminating Company ("CEI") 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. CEI's currently approved vegetation specification provides vegetation to be pruned to achieve 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 a primary voltage interruption due to a vegetation-caused outage over the period of a 4 year cycle (subject to the levelization process), a proactive Inspect/Maintain process will target selective vegetation removal for continued reliable system operation. 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.

The Inspect/Maintain Specification may be utilized to levelize CEI's circuits over the period 2010-2013. This levelization process is necessary due to a disproportionate workload associated with the circuits scheduled for maintenance in certain years. The levelization process enables CEI to make responsible vegetation management decisions, without an impact to the safe and reliable performance of the distribution system, when shifting work from one calendar year to the next, and could also be used on circuits designated for Enhanced or Standard Specification work processes. CEI plans to complete the levelization by the end of 2013.

### Corrective Maintenance

Corrective maintenance 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.

Justification

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

- Applicable statutory law and regulations.
- 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).

Nothing in this Vegetation Management Program, the Company's Contractor Guidelines or the Commission rules and regulations is intended to limit or modify the grant of legal rights to the Company under a right-of-way or easement. To the extent that a question arises regarding the legal rights, including the existence and scope of easements and right-of-ways, such questions remain in the exclusive jurisdiction of a court of law.

The Toledo Edison Company (“Toledo Edison”)

Inspection, Maintenance, Repair and Replacement  
Programs



## **Distribution Overhead Circuits & Equipment Inspection, Maintenance, Repair and Replacement Program**

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### Program Description

Pursuant to Ohio Administrative Code ("O.A.C.") 4901:1-10-27(D)(1) and 4901:1-10-27(E)(1)(b), The Toledo Edison Company ("Toledo Edison") shall visually inspect overhead circuit lines and equipment on a five-year cycle. The purpose for inspecting overhead circuit 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 the overhead facilities.

Approximately one-fifth 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 pole) – deteriorated condition, sustained damage (lightning, vehicle, woodpecker holes)
- Pole hardware – condition, damage
- Guying – condition, damage
- Pole-mounted distribution equipment – condition, damage

### Corrective Maintenance

Supporting structures with recorded defects that Toledo Edison could reasonably be expected to endanger life or property shall be promptly repaired, disconnected, or isolated. Deficiencies likely to cause an outage shall be corrected within one year of the completion of the inspection that originally revealed such deficiencies as required by O.A.C. 4901:1-10-27(E)(4). Corrective maintenance of a deficiency identified by Toledo Edison may include repair or replacement. Items found that are not likely to cause an outage will be evaluated and prioritized on a case-by-case basis.

### Justification

Pursuant to O.A.C. 4901:1-10-27(E)(2), the practice of performing overhead circuit and equipment inspections on a five-year cycle is based on accepted electric utility practices and the experience of Toledo Edison. 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 five years 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.

## **Distribution Primary & Secondary Enclosures Inspection, Maintenance, Repair and Replacement Program**

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### Program Description

Pursuant to Ohio Administrative Code ("O.A.C.") 4901:1-10-27(E)(1)(c), The Toledo Edison Company ("Toledo Edison") hereby requests to modify its current distribution underground equipment program. Toledo Edison's current approved program calls for a security and complete field inspection of all pad-mounted equipment. Toledo Edison's modified program calls for the visual inspection of distribution underground equipment (i.e., pad-mounted transformers and switchgear and secondary enclosures including pedestals and handholes) on a five-year cycle. The purpose for inspecting distribution underground equipment is to identify and repair unsafe conditions or conditions that may adversely affect service reliability and electrical safety.

The preventative maintenance inspection shall include the visual inspection of the condition and security of underground equipment.

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
- Warning labels – electrical hazard warning label and landscaping instructions notice

Handholes and Pedestals – inspection and recording of abnormal conditions including but not limited to the following:

- Equipment condition – holes and washout
- Security – locking mechanisms

### Corrective Maintenance

Equipment with recorded defects that Toledo Edison could reasonably expect to endanger life or property shall be promptly repaired, disconnected, or isolated. Deficiencies likely to cause an outage shall be corrected within one year of the completion of the inspection that originally revealed such deficiencies as required by O.A.C. 4901:1-10-27(E)(4). Corrective maintenance of a deficiency identified by Toledo Edison may include repair or replacement. Items found that are not likely to cause an outage will be evaluated and prioritized on a case-by-case basis.

### Justification

Pursuant to O.A.C. 4901:1-10-27(E)(2), the practice of performing distribution underground equipment inspections on a five-year cycle is based on accepted electric utility practices and the experience of Toledo Edison. 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 five years 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.

#### Program Description

Pursuant to Ohio Administrative Code ("O.A.C.") 4901:1-10-27(E)(1)(e), The Toledo Edison Company ("Toledo Edison") visually inspects distribution overhead line capacitors annually. The purpose for inspecting distribution line capacitors 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 shall be divided into two parts; a visual inspection (for both fixed and switched banks) and an operational test (switched banks only). The inspection consists of the recording of abnormal conditions including but not limited to the following types of distribution line capacitor equipment:

- Bank oil/vacuum switches –operational test (switched-bank only)
- Case - damage, bulging, leaking, rust
- Bushings - damage, signs of tracking, cracking or lightning strike
- Mounting brackets – cracked, bent, broken
- Pole and Equipment racks – damage or appreciable rust
- Grounds – damage, corrosion
- Protective equipment – cutouts, surge arrestors

#### Corrective Maintenance

Capacitors and supporting structures with recorded defects that Toledo Edison could reasonably expect to endanger life or property shall be promptly repaired, disconnected, or isolated. Deficiencies likely to cause an outage shall be corrected within one year of the completion of the inspection that originally revealed such deficiencies as required by O.A.C. 4901:1-10-27(E)(4). Corrective maintenance of a deficiency identified by Toledo Edison may include repair or replacement. Items found that are not likely to cause an outage will be evaluated and prioritized on a case-by-case basis.

#### Justification

Pursuant to O.A.C. 4901:1-10-27(E)(2), the practice of performing annual capacitor inspections is based on accepted electric utility practices and the experience of Toledo Edison. 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.

Program Description

Pursuant to Ohio Administrative Code (“O.A.C.”) 4901:1-10-27(E)(1)(d), The Toledo Edison Company (“Toledo Edison”) hereby requests to modify its current distribution line recloser program. Toledo Edison’s current approved program calls for quarterly counter readings as well as an annual field inspection. Toledo Edison’s modified program calls for a visual inspection of 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 momentary outages. The field inspection includes but is not limited to the following:

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

Corrective Maintenance

Reclosers and supporting structures with recorded defects that Toledo Edison could reasonably expect to endanger life or property shall be promptly repaired, disconnected, or isolated. Deficiencies likely to cause an outage shall be corrected within one year of the completion of the inspection that originally revealed such deficiencies as required by O.A.C. 4901:1-10-27(E)(4). Corrective maintenance of a deficiency identified by Toledo Edison may include repair or replacement. Items found that are not likely to cause an outage will be evaluated and prioritized on a case-by-case basis.

Justification

Pursuant to O.A.C. 4901:1-10-27(E)(2), the practice of performing annual recloser inspections is based on accepted electric utility practices and the experience of Toledo Edison. 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 as well as quarterly counter readings 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.

#### Program Description

Pursuant to Ohio Administrative Code ("O.A.C.") 4901:1-10-27(E)(1)(a), The Toledo Edison Company ("Toledo Edison") hereby requests to modify its current distribution wood pole groundline inspection program. Toledo Edison's current approved program may include a partial excavation on poles thirty-five (35) years old or older. Toledo Edison's modified program requires a visual inspection of distribution wood poles on a ten-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. In addition, if any pole has indication of incipient decay or the pole is thirty-five (35) years or older, pole boring shall be performed to further assess the condition of the pole.

All poles will be visually inspected on a ten-year cycle. 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, leaking
- Testing for decayed internal wood

In addition to the visual inspection, poles showing incipient decay or poles that are thirty-five (35) year 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
- Verify shell thickness

#### Corrective Maintenance

Wood poles and supporting structures with recorded defects that Toledo Edison could reasonably expect to endanger life or property shall be promptly repaired, disconnected, or isolated. All remaining deficiencies likely to cause an outage shall be corrected within one year of the completion of the inspection that originally revealed such deficiencies as required by O.A.C. 4901:1-10-27(E)(4). Corrective maintenance of a deficiency identified by Toledo Edison may include repair or replacement. Items not likely to cause an outage will be evaluated and prioritized on a case-by-case basis.

Justification

Pursuant to O.A.C. 4901:1-10-27(E)(2), the practice of performing wood pole inspections on a ten-year cycle is based on accepted electric utility practices and the experience of Toledo Edison. 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 ten years 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.

Program Description

Pursuant to Ohio Administrative Code ("O.A.C.") 4901:1-10-27(D)(3) and 4901:1-10-27(E)(1)(g), The Toledo Edison Company ("Toledo Edison") inspects its distribution substations twelve times annually, with no inspection interval to exceed forty calendar days between inspections. The purpose of these monthly inspections of the distribution substations is to capture monthly 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.

Each monthly preventative maintenance inspection consists of two groups of related tasks, monthly readings and the patrol inspection.

1. Monthly Readings
  - Read and record currents, voltages, temperatures, pressures and operations counters on installed substation equipment
2. Patrol Inspection - 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)
  - Substation major equipment (power transformers, circuit breakers, instrument transformers)
  - Batteries and chargers
  - Relays

Corrective Maintenance

Equipment with recorded defects that Toledo Edison could reasonably expect to endanger life or property shall be promptly repaired, disconnected, or isolated. Deficiencies likely to cause an outage shall be corrected within one year of the completion of the inspection that originally revealed such deficiencies as required by O.A.C. 4901:1-10-27(E)(4). Corrective maintenance of a deficiency identified by Toledo Edison may include repair or replacement. Items found that are not likely to cause an outage will be evaluated and prioritized on a case-by-case basis.

Justification

Pursuant to O.A.C. 4901:1-10-27(E)(2), the practice of performing monthly substation inspections is based on accepted electric utility practices and the experience of Toledo Edison. 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 personal safety, equipment integrity or service reliability.



#### Program Description

Pursuant to Ohio Administrative Code ("O.A.C") 4901:1-10-27(E)(1)(f), The Toledo Edison Company ("Toledo Edison") 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. Toledo Edison's currently approved vegetation specification provides vegetation to be pruned to achieve 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 a primary voltage interruption due to a vegetation-caused outage over the period of a 4 year cycle (subject to the levelization process), a proactive Inspect/Maintain process will target selective vegetation removal for continued reliable system operation. 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.

The Inspect/Maintain Specification may be utilized to levelize Toledo Edison's circuits over the period 2010-2013. This levelization process is necessary due to a disproportionate workload associated with the circuits scheduled for maintenance in certain years. The levelization process enables Toledo Edison to make responsible vegetation management decisions, without an impact to the safe and reliable performance of the distribution system, when shifting work from one calendar year to the next, and could also be used on circuits designated for Enhanced or Standard Specification work processes. Toledo Edison plans to complete the levelization by the end of 2013.

#### Corrective Maintenance

Corrective maintenance 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.

Justification

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

- Applicable statutory law and regulations.
- 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).

Nothing in this Vegetation Management Program, the Company's Contractor Guidelines or the Commission rules and regulations is intended to limit or modify the grant of legal rights to the Company under a right-of-way or easement. To the extent that a question arises regarding the legal rights, including the existence and scope of easements and right-of-ways, such questions remain in the exclusive jurisdiction of a court of law.

American Transmission Systems, Inc. ("ATSI")  
Inspection, Maintenance, Repair and Replacement  
Programs



American Transmission Systems, Inc.  
a subsidiary of FirstEnergy Corp.

## **Transmission Circuit and Line Inspection, Maintenance, Repair and Replacement Program**

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### Program Description

Pursuant to Ohio Administrative Code ("O.A.C") 4901:1-10-27(D)(2) and 4901:1-10-27(E)(1)(b), American Transmission Systems, Inc. ("ATSI") hereby requests to modify its current aerial inspection program. ATSI's current approved program call for aerial patrols of circuits and lines twice per year. ATSI's modified program shall perform transmission (69 kV to 345 kV) circuit and line inspections at least once (1) per year. The purpose for routine circuit and line inspections is to ensure the integrity of in-service transmission lines to maintain quality, safe, and reliable service.

This preventative maintenance is performed from a helicopter and includes inspection and recording of abnormal conditions including but not limited to the following transmission equipment:

- Poles and equipment (deteriorated tops, broken guy wires, crossarm condition, braces)
- Towers
- Hardware (insulators, conductor strands, bundle spacers, grounding connections)
- Right-of-Way (vegetation, encroachments, ground erosion)

### Corrective Maintenance

Lines and equipment with recorded defects that ATSI could reasonably expect to endanger life or property shall be promptly repaired, disconnected, or isolated. All remaining deficiencies likely to cause an outage shall be corrected within one year of the completion of the inspection that originally revealed such deficiencies as required by O.A.C. 4901:1-10-27(E)(4). Corrective maintenance of a deficiency identified by ATSI may include repair or replacement. Items not likely to cause an outage will be evaluated and prioritized on a case-by-case basis.

### Justification

Pursuant to O.A.C. 4901:1-10-27(E)(2), the practice of performing annual circuit and line inspections is based on accepted electric utility practices and the experience of ATSI. 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 at least once per 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.



American Transmission Systems, Inc.  
a subsidiary of FirstEnergy Corp.

## **Transmission Wood Pole Inspection, Maintenance, Repair and Replacement Program**

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### Program Description

Pursuant to Ohio Administrative Code ("O.A.C") 4901:1-10-27(E)(1)(a), American Transmission Systems, Inc. ("ATSI") inspects and treats transmission (69 kv to 345 kv) wood poles, on a fifteen (15) year cycle. The purpose for inspecting and treating transmission wood poles is to ensure the integrity of in-service poles and to maintain quality, safe and reliable service.

This visual inspection is made from the groundline to the top of the pole. Poles are hammer-sounded from a height of six feet down to the groundline. The inspector will listen for sounds that are typical of decayed internal wood. Poles may be bored and inspected for internal decay. Poles are internally treated if boring and inspection indicate decay pockets larger than 1". Poles are excavated 18" below groundline and externally treated.

This preventative maintenance includes inspection and recording of abnormal conditions including but not limited to the following transmission wood pole equipment:

- Guy wires (hardware, plates, tension)
- Pole (pole cap, decay, cracks, splits, insect damage)
- Equipment (crossarms, braces, insulators, clamps, mounting hardware)
- Conductors (excessive wear, wire strands, sag, clearances)

### Corrective Maintenance

Transmission wood poles with recorded defects that ATSI could reasonably expect to endanger life or property shall be promptly repaired, disconnected, or isolated. All remaining deficiencies likely to cause an outage shall be corrected within one year of the completion of the inspection that originally revealed such deficiencies as required by O.A.C. 4901:1-10-27(E)(4). Corrective maintenance of a deficiency identified by ATSI may include repair or replacement. Items not likely to cause an outage will be evaluated and prioritized on a case-by-case basis.

### Justification

Pursuant to O.A.C. 4901:1-10-27(E)(2), the practice of performing wood pole inspections on a fifteen (15) year cycle is based on accepted electric utility practices and the experience of ATSI. 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 fifteen (15) years 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.



American Transmission Systems, Inc.  
a subsidiary of FirstEnergy Corp.

## **Transmission Vegetation Management Inspection, Maintenance, Repair and Replacement Program**

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### Program Description

Pursuant to Ohio Administrative Code ("O.A.C") 4901:1-10-27(E)(1)(f), American Transmission Systems, Inc. ("ATSI") performs vegetation management to ensure the continued and safe operation of Transmission circuits. Vegetation control is the removal of vegetation that has the potential to interfere with the safe and efficient operation of the transmission system. Clearing vegetation located in a specified corridor is performed in accordance with pre-established schedules, or as required to ensure line reliability, maintain access, make repairs, or restore service.

A periodicity of five years has demonstrated to be effective for most locations. Select locations may require more-frequent spot-control, such as urban areas or where conditions limit tree to conductor clearances. The frequency of vegetation control activities is dependent upon and impacted by variability in local conditions such as conductor movement (sag and sway), tree species, growth rates, terrain and results of other transmission circuit and line inspection programs.

### Corrective Maintenance

Corrective maintenance 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.

Trees located adjacent to the transmission corridor that are either dead, diseased, declining, severely leaning or significantly encroaching are also targeted for removal.

### Justification

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

- Applicable statutory law and regulations.
- Generally accepted industry practices.
- Easements which provide the legal authority for control and removal of trees and vegetation on transmission rights of way that traverse private property.
- NERC Vegetation Management Standard FAC-003-1
- 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).

Nothing in this Vegetation Management Program, the Company's Contractor Guidelines or the Commission rules and regulations is intended to limit or modify the grant of legal rights to the Company under a right-of-way or easement. To the extent that a question arises regarding the legal rights, including the existence and scope of easements and right-of-ways, such questions remain in the exclusive jurisdiction of a court of law.



American Transmission Systems, Inc.  
a subsidiary of FirstEnergy Corp.

## **Transmission Substation Inspection, Maintenance, Repair and Replacement Program**

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### Program Description

Pursuant to Ohio Administrative Code ("O.A.C") 4901:1-10-27(D)(3) and 4901:1-10-27(E)(1)(g), American Transmission Systems, Inc. ("ATSI") inspects its transmission substations twelve times annually, with no inspection interval to exceed forty calendar days between inspections. The purpose of these monthly inspections is to capture monthly 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.

Each monthly preventative maintenance inspection consists of two groups of related tasks, monthly readings and the patrol inspection.

1. Monthly Readings
  - Read and record currents, voltages, temperatures, pressures and operations counters on installed substation equipment
2. Patrol Inspection - 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)
  - Substation major equipment (power transformers, circuit breakers, instrument transformers)
  - Batteries and chargers
  - Relays

### Corrective Maintenance

Equipment with recorded defects that could reasonably be expected to endanger life or property shall be promptly repaired, disconnected, or isolated. Deficiencies likely to cause an outage shall be corrected within one year of the completion of the inspection that originally revealed such deficiencies as required by O.A.C. 4901:1-10-27(E)(4). Corrective maintenance of a deficiency may include repair or replacement. Items found that are not likely to cause an outage will be evaluated and prioritized on a case-by-case basis.

### Justification

Pursuant to O.A.C. 4901:1-10-27(E)(2), the practice of performing monthly substation inspections is based on accepted electric utility practices and the experience of ATSI. 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 personal safety, equipment integrity or service reliability.



**This foregoing document was electronically filed with the Public Utilities**

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**Case No(s). 09-0802-EL-ESS**

Summary: Request Ohio Edison Company, The Cleveland Electric Illuminating Company, The Toledo Edison Company, and American Transmission Systems, Inc. (collectively, the "Companies") programs for inspection, maintenance, repair, and replacement of transmission and distribution circuits and equipment required under O.A.C. 4901:1-10-27(E); and requests for revisions and amendments to that program pursuant to O.A.C. 4901:1-10-27(F).  
electronically filed by Ms. Ebony L Miller on behalf of Ohio Edison Company, The Cleveland Electric Illuminating Company, The Toledo Edison Company and American Transmission Systems, Inc.