

**CONTRACT LETTER FOR
CONTRACT NO. 026987430000X103**

This Contract No. 026987430000X103 ("Contract") is made to be effective as of the 1st day of May 2014 (the "Effective Date") by and between **American Electric Power Service Corporation**, a New York corporation, **as agent for the operating companies of the American Electric Power System** ("Owner"), with offices at 1 Riverside Plaza, Columbus, Ohio 43215 and **The Davey Tree Expert Company**, ("Contractor"), with offices at 1500 North Mantua Street, Kent, Ohio 44240.

1. DESCRIPTION OF SERVICES

Subject to the terms and conditions hereof, Contractor agrees to furnish to Owner on an as-needed basis contract utility foresters, work planners and inspectors, as further described in Exhibit C. This Contract covers only such services as may be assigned by Owner to Contractor, with no guarantees of a minimum volume of services.

2. ENGAGEMENT PROCESS

This Contract is intended to be a master agreement under which Owner may request services to be performed by Contractor on an as needed basis. The parties agree the execution of this Contract does not authorize Contractor to begin performance of services. Services shall be requested by Owner either by verbal, written or electronic request ("Work Request"). All verbal requests shall be followed by a written confirmation. Each Work Request shall contain a detailed description of the requested services, the location, start and completion dates, pricing method, points of contact and other pertinent information.

Upon receipt of a Work Request, Contractor shall promptly perform the services described in said Work Request. Each Work Request shall be governed by the terms, conditions and provisions of this Contract, whether or not such statement is made or included in any individual Work Request.

The parties agree that any terms and conditions inconsistent with, additional to, or different than this Contract that may be preprinted or attached to a quote, acknowledgement, Work Request, or any other document that the parties may use for the ordering of services hereunder shall not apply and each party hereby rejects all such terms and conditions.

The execution of this Contract does not constitute an exclusive relationship between the parties. Owner reserves the right, at any time, to use its own forces, equipment, tools, conveyances and materials or those of another contractor to perform the same or similar services.

3. CONTRACT DOCUMENTS, INCORPORATION AND PRIORITY

Contractor and Owner agree that Work will be performed in accordance with the following Contract documents, attached hereto unless otherwise noted, incorporated herein and listed in their order of priority in the event of a conflict between the documents:

- a. This Contract Letter;

- b. AEP General Terms and Conditions for Labor and Services, March 2009 Rev. 2 dated 7/12, as modified by the Agreed Exceptions dated 5/8/2014 ("General Terms"), AEP Supplementary Terms and Conditions for Forestry Contracts dated 06/24/2011, as modified by the Agreed Exceptions dated 5/8/2014, and AEP Security & Aviation Aircraft Deconfliction Policy and Procedures, Version 1.0 dated 07/15/2013, collectively designated as Exhibit A;
- c. Transmission Vegetation Management Program, Rev. 12 effective 07/31/2013 and AEP Forestry Goals, Procedures, and Guidelines for Distribution and Transmission Line Clearance Operations dated 05/14/2009, collectively designated as Exhibit B;
- d. Requirements and Position Descriptions for Forestry Support Services dated April 11, 2014, designated as Exhibit C;
- e. Contractor's Rates for AEP East and AEP West, collectively designated as Exhibit D;
- f. Work Request(s).

4. TERM

The term of this Contract shall commence on the Effective Date and shall remain in full force and effect through April 30, 2019, unless earlier terminated in accordance with this Contract. If this Contract is terminated or expires prior to services under a Work Request being completed, unless the parties agree otherwise in a signed writing, the services under such Work Request shall be completed pursuant to the terms of this Contract.

5. PRICING AND PAYMENT TERMS

The parties agree that Contractor shall be compensated for the satisfactory performance of services in accordance with the rates contained in Exhibit D.

Contractor's labor rates shall be held firm through April 30, 2016. Beginning May 1, 2016, and on May 1st each year thereafter, Contractor's labor rates will be adjusted using the Bureau of Labor Statistics, U.S. Department of Labor, Employment Cost Index (ECI) for Total Compensation (not seasonally adjusted), for Private Industry Workers, Construction, Extraction, Farming, Fishing and Forestry. The percent change for the 12-months ended in January of the year of the adjustment will be multiplied by the current labor rates to determine the adjusted labor rates.

Contractor's equipment rates shall be held firm through April 30, 2019.

6. FUEL ADJUSTMENTS

The base fuel price is \$4.00 per gallon ("Base Fuel Price"). The weekly fuel price is the state average for regular grade unleaded gasoline taken from the American Automobile Association's website ("Weekly Fuel Price"). When preparing the weekly invoices, if that week's Weekly Fuel Price differs from the Base Fuel Price by more than ten (10) cents, a fuel adjustment for each piece of equipment will be calculated by using the following formula:

Fuel adjustment = [(Weekly Fuel Price) – (Base Fuel Price)] x gallons/hour x Equipment hours billed

The gallons/hour figure is taken from the Contractor's Rate Sheets in Exhibit D. The sum of the fuel adjustments for each piece of equipment used that week shall be added to or subtracted from that week's invoice amount.

6. INVOICING REQUIREMENTS

Contractor shall create timesheets in Owner's Right-of-Way Management ("RWM") software system, or other applicable system as designated by Owner, weekly, in arrears. Retention will not be withheld on Contractor invoices.

7. NOTICES

In accordance with Article 33 of the General Terms, the representatives of the parties for receipt of notices are:

For Owner: Sonia Pickens, Contract Analyst
 1 Riverside Plaza, 9th floor
 Columbus, OH 43215
 614-716-1357 / srvaughan@aep.com

For Contractor: Jack McCabe, Regional Operations Manager
 1500 N. Mantua St.
 Kent, OH 44240
 330-673-5685 x8083 / jack.mccabe@davey.com

8. OPERATION CONTACTS

Name	Role	Email	Phone
Sonia Pickens	Contract Analyst	srvaughan@aep.com	
Walter Sherry	Manager, Forestry Operations	washerry@aep.com	

DISTRIBUTION:

Name	Role	Email	Phone
Phil Ross	Appalachian Power Company (APCO) Supervisor	ptross@aep.com	
Marc Labrie	Indiana-Michigan Power Company (I&M) Supervisor	jmlabrie@aep.com	
Mark Jackson	Kentucky Power Company (KPCO) Supervisor	mejackson@aep.com	
Mike Chedester	Ohio Power Company (OPCO) Supervisor	machedester@aep.com	
Richard Simpson	Ohio Power Company (OPCO) Supervisor	rasimpson@aep.com	
Danny Salter	Southwestern Electric Power Company (SWEPCO) Supervisor	dssalter@aep.com	

Richard Bewley	Public Service Company of Oklahoma (PSO) Supervisor	rdbewley@aep.com	
Grant Ehlen	Texas Central Company & Texas North Company (AEP Texas) Supervisor	gsehen@aep.com	

TRANSMISSION:

Name	Role	Email	Phone
Richard Karber	East Supervisor (IN, MI, OH, WV)	rkarber@aep.com	
Rick Mowbray	East Supervisor (KY, TN, WV, VA)	drmowbray@aep.com	
Jim Cruser	West Supervisor (TX, LA, OK, AR)	jgcruser@aep.com	

9. MISCELLANEOUS

Contractor agrees:

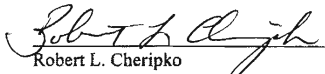
- a. to maintain with Owner throughout the term of the Contract a current certificate of insurance (COI) in accordance with Article 16.0 of the General Terms. COI submittals should be either mailed or emailed to the Contract Analyst noted in Section 7;
- b. to provide Owner with notice in the event Contractor's Interstate Experience Modification Rating (EMR) exceeds 1.0 during the term of the Contract.


All capitalized terms not defined herein are as defined in the General Terms.

IN WITNESS WHEREOF, the parties hereto have caused this Contract to be signed by their respective duly authorized representatives on the dates set forth below to be effective as of the Effective Date.

American Electric Power Service Corporation
 as agent for the operating companies of the
American Electric Power System

^{Richard Karber}
 Davey Resource Group, A Division of
The Davey Tree Expert Company


 Robert L. Cheripko
 Managing Director Customer Operations


 Jack McCabe
 Regional Operations Manager

May 27, 2014
 date

May 22, 2014
 date

Agreed Exceptions between AEPSC and Davey Resource Group May 8, 2014

The following sections of the General Terms are modified to read as follows:

17.2 TO THE EXTENT PERMITTED BY LAW, CONTRACTOR SHALL INDEMNIFY, DEFEND AT ITS EXPENSE, AND SAVE OWNER HARMLESS FROM, ANY LIABILITIES, COST AND CLAIMS, INCLUDING JUDGMENTS RENDERED AGAINST, AND FINES AND PENALTIES IMPOSED UPON, OWNER AND REASONABLE ATTORNEYS' FEES AND ALL OTHER COSTS OF LITIGATION (COLLECTIVELY, "LIABILITIES"), ARISING OUT OF THE CONTRACT, INCLUDING INJURIES, DISEASE OR DEATH TO PERSONS, OR DAMAGE TO PROPERTY, AND ENVIRONMENTAL CLAIMS AND LIABILITIES, TO THE EXTENT CAUSED BY THE NEGLIGENCE OF CONTRACTOR, ITS EMPLOYEES, AGENTS OR SUBCONTRACTORS, OR BASED ON A BREACH OF THIS CONTRACT BY CONTRACTOR~~IN ANY WAY ATTRIBUTABLE TO THE PERFORMANCE OF THE CONTRACT, EXCEPT THAT CONTRACTOR'S OBLIGATION TO INDEMNIFY OWNER SHALL NOT APPLY TO THE EXTENT ANY LIABILITIES ARISING FROM OWNER'S SOLE NEGLIGENCE. TO THE EXTENT PROVIDED IN THIS SECTION, IN STATES OTHER THAN OHIO, MICHIGAN, KENTUCKY, TENNESSEE, MISSOURI, OKLAHOMA, VIRGINIA, AND WEST VIRGINIA, CONTRACTOR AGREES TO INDEMNIFY OWNER FOR LIABILITIES ARISING FROM OWNER'S ACTS AND OMISSIONS, NEGLIGENT OR OTHERWISE. OWNER SHALL HAVE THE RIGHT TO SELECT ITS OWN COUNSEL AND TO HAVE CONSEL SEPARATE FROM CONTRACTOR, ALL AT CONTRACTOR'S EXPENSE.~~

17.4 CONTRACTOR SHALL BE LIABLE FOR REASONABLE ATTORNEYS' FEES AND ALL COSTS OF LITIGATION ASSOCIATED WITH ENFORCEMENT OF ALL INDEMNITY OBLIGATIONS SET FORTH IN THE CONTRACT, IF OWNER IS THE PREVAILING PARTY IN SUCH ENFORCEMENT LITIGATION.

18.1 Add as an additional sentence:

Except for Contractor's indemnification obligations under this Contract or for claims based on gross negligence or willful misconduct, Contractor's liability to Owner arising from or related to Contractor's performance or non-performance under this Contract shall not exceed \$20 million per incident.

The following section of the AEP Supplementary Terms and Conditions for Forestry Contracts is modified to read as follows:

3.3.1 When Contractor has eleven (11) or more total employees on ~~various~~ any single projects of Owner or its affiliates, Contractor will have a safety professional visit the various work sites and/or work crews ~~weekly at an appropriate frequency~~ to ensure Contractor's safety program is being enforced. All safety professionals shall have, at a minimum, the OSHA 30 hour training. A safety professional is defined as having the responsibilities of safety compliance, enforcement and/or training.

AMERICAN ELECTRIC POWER

AEP GENERAL TERMS AND CONDITIONS FOR LABOR AND SERVICES

March 2009 Rev. 2 dated 7/12

TABLE OF CONTENTS

<u>ARTICLE NO.</u>	<u>HEADING</u>	<u>PAGE NO.</u>
1.0	DEFINITIONS.....	1
2.0	CONTRACTOR'S OBLIGATIONS.....	2
3.0	TERM AND EFFECTIVE DATE.....	3
4.0	RELATIONSHIP OF THE PARTIES.....	3
5.0	ASSIGNMENT AND SUBCONTRACTING.....	3
6.0	LABOR RELATIONS.....	4
7.0	SAFETY AND SECURITY.....	4
8.0	MATERIALS.....	7
9.0	INSPECTION AND ACCEPTANCE.....	8
10.0	SCHEDULE.....	8
11.0	TERMS OF PAYMENT.....	9
12.0	CHANGES IN WORK AND EXTRA WORK.....	9
13.0	REIMBURSEMENT FOR COST-PLUS WORK.....	11
14.0	BACKCHARGES.....	11
15.0	TAXES.....	11
16.0	INSURANCE.....	12
17.0	INDEMNIFICATION.....	14
18.0	LIMITATION OF LIABILITY.....	15
19.0	LIENS.....	15
20.0	INTELLECTUAL PROPERTY.....	15
21.0	DRAWINGS AND DATA.....	16
22.0	CONFIDENTIALITY.....	16
23.0	DEFAULT.....	17
24.0	DAMAGES FOR DELAY.....	18
25.0	FORCE MAJEURE.....	18
26.0	SUSPENSION.....	18
27.0	TERMINATION.....	19
28.0	MATERIALS AND WORKMANSHIP WARRANTY.....	20
29.0	REPORTING OF COMPLAINTS.....	20
30.0	RETENTION AND EXAMINATION OF INFORMATION, BOOKS AND RECORDS.....	21
31.0	COMPLIANCE WITH LAWS.....	21
32.0	PERMITS AND LICENSES.....	22
33.0	NOTICES.....	22
34.0	SEVERABILITY.....	22
35.0	WAIVER.....	22
36.0	NON-DISCLOSURE.....	22
37.0	HEADINGS.....	22
38.0	AFFILIATED COMPANIES.....	23
39.0	APPLICABLE LAWS AND JURISDICTION.....	23
40.0	ENTIRE AGREEMENT.....	23
41.0	BINDING EFFECT; NO THIRD-PARTY BENEFICIARIES.....	23
42.0	EXECUTION; COUNTERPARTS.....	23
43.0	SURVIVAL.....	23

AFFIDAVIT OF COMPLETION

Exhibit 1

**AEP GENERAL TERMS AND CONDITIONS
FOR LABOR AND SERVICES**

1.0 DEFINITIONS

- 1.1 Business Day: "Business Day" means any calendar day, other than a Saturday or Sunday or a calendar day on which U.S. commercial banking institutions are authorized or required by law to close.
- 1.2 Change Order: "Change Order" means a written order as defined and issued in accordance with Article 12.0.
- 1.3 Contract: "Contract" means collectively the Contracting Instrument and all documents referenced in the Contracting Instrument and any Change Orders, amendments or addenda.
- 1.4 Contract Price: "Contract Price" means the price to be paid to the Contractor for the performance of Work as set forth in the Contracting Instrument.
- 1.5 Contracting Instrument: "Contracting Instrument" means the contractual document that identifies the parties, the nature of the Work, the Contract Price, documents to be included as part of a Contract, and other matters relating to a Contract. The Contracting Instrument may be in the form of a contract letter, blanket purchase order, purchase order or other similar documents.
- 1.6 Contractor: "Contractor" means the entity contracting with Owner for the performance of Work.
- 1.7 Direct Cost: "Direct Cost" means the actual costs and charges incurred and payments made by Contractor, its Subcontractors, for Site equipment, materials, services and labor (including payroll burden and expenses) which are directly attributable to the performance of Contractor's Work hereunder. Direct Cost includes Contractor's home office or Site labor to the extent Contractor's home office or Site labor is directly assignable to the Work which must be demonstrable under the circumstances. Direct Cost shall not include corporate, general and administrative costs including home office functions, sales, marketing, accounting, human resources, information technology, payroll, profit, research, development, quality assurance and control, purchasing, safety, management, administration, warranties, insurances, off-Site or other unabsorbed costs.
- 1.8 Final Acceptance: "Final Acceptance" means Owner's determination that the Work has been completed in accordance with the Contract requirements.
- 1.9 Initial Acceptance: "Initial Acceptance" means Owner's determination prior to final inspection and testing that the Work conforms to the Contract requirements for purposes of receipt.
- 1.10 Owner: "Owner" means any one or more of the companies of the American Electric Power System as may be specified in the Contract Instrument.
- 1.11 Site: "Site" means Owner's property or such other premises (including adjacent bodies of water and property owned or controlled by a third-party) upon which the Work is to be performed.
- 1.12 Subcontractor: "Subcontractor" means vendors, suppliers, consultants, and subcontractors of any tier, materialmen, professionals, laborers, and all other persons providing equipment, materials or services directly or indirectly to Contractor in connection with the Work.
- 1.13 Work: "Work" means all of Contractor's obligations under the Contract.

2.0 CONTRACTOR'S OBLIGATIONS

- 2.1 Contractor shall at its expense provide everything necessary for the complete, proper and timely execution of the Work including, but not limited to, home office support, supervision, labor, tools, transportation, safety equipment, construction equipment, temporary utilities and facilities, equipment to be installed, materials and supplies, unless explicitly excluded in the Contract. Contractor's performance of the Work shall include everything requisite and necessary to comply with prudent electric utility industry standards and to complete its Work, notwithstanding the fact that every item necessarily involved may not be specifically mentioned. Details and items not indicated by the Contract documents shall be adequately and properly performed by Contractor at no extra cost if such details and items are necessary to complete the intent of the Contract or otherwise to complete the Work.
- 2.2 Contractor is responsible for considering the conditions affecting the Work including, but not limited to, conditions affecting the transportation, disposal, handling and storage of materials; the availability and cost of labor, water, electric power, utilities and roads; the uncertainties of weather, river stages, and similar physical conditions at the Site; the conformation and condition of the ground; and the character of equipment and facilities needed. Contractor shall take into account the character, quality and quantity of surface and subsurface materials or obstacles to be encountered to the extent this information is reasonably ascertainable from the contract documents or an inspection of the Site.
- 2.3 Contractor shall immediately and before such conditions are disturbed notify Owner of: (a) subsurface or latent physical conditions at the Site which differ materially from those indicated in the Contract; (b) unusual geologic conditions at the Site which differ materially from conditions ordinarily encountered or from conditions addressed in the Contract; or (c) artifacts or articles which appear to have archaeological or historical significance. Owner shall promptly investigate such conditions and, if such conditions do materially differ and cause an increase or decrease in Contractor's cost of, or the time required for, performance of any part of the Work, the parties shall agree to amend the Contract. No claim of Contractor under this clause shall be allowed unless Contractor has given immediate notice as required above and confirmed such notice in writing within ten (10) days of discovery.
- 2.4 Contractor shall have an authorized representative at the Site to whom Owner may give instructions at all times when Work is being performed.
- 2.5 Contractor shall assign qualified and competent personnel to perform the Work and have qualified and competent supervision at the Site at all times to direct and observe the Work. Key personnel shall not be removed from the Work without prior notice to, and consent by Owner which shall not be unreasonably withheld. Contractor will investigate and take appropriate action with respect to any personnel problems brought to its attention by Owner.
- 2.6 Contractor shall confine all of its operations and personnel to those areas of the Site to which Owner authorizes access.
- 2.7 Contractor's personnel may not operate Owner's tools, vehicles, materials or equipment ("Owner's Equipment") without Owner's prior authorization. If Contractor borrows Owner's Equipment, Contractor (a) agrees that Owner has provided Owner's Equipment AS IS, with no representations or warranties; (b) assumes full responsibility for the protection of the borrowed Owner's Equipment; (c) assumes all liability for injuries or damages resulting from the use of the borrowed Owner's Equipment; and (d) agrees to return the borrowed Owner's Equipment to Owner in the same condition as when it was borrowed, or, if repairs are necessary, to cause such repairs to be performed promptly at Contractor's expense before the Owner's Equipment is returned to Owner. Owner has no obligation to lend Owner's Equipment to Contractor.

Page 3 of 23

- 2.8 Contractor shall cooperate with Owner and others working at or near the Site. Contractor shall promptly report to Owner any defects in the work of others which affects the Work. Failure to report such defects constitutes acceptance of the conditions by Contractor. Contractor shall properly fit, connect and coordinate its Work with that of Owner and other contractors.
- 2.9 Contractor shall keep all of its work areas free from trash and debris, and keep its work areas "broom clean" on a continuous basis.
- 2.10 Contractor shall secure and protect its materials, tools, equipment and the Work, including Owner-provided materials and equipment.
- 2.11 Contractor is responsible for the proper execution of the Work with respect to any base lines and bench marks established by Owner.
- 2.12 If the Work is subject to prevailing wage requirements, Contractor agrees to comply with such requirements.
- 2.13 Contractor, its Subcontractors, and their respective employees and agents involved in the Work shall adhere to the provisions contained in Owner's Code of Business Conduct which can be found at Owner's website.

3.0 TERM AND EFFECTIVE DATE

- 3.1 The Contract shall commence as of the effective date and, unless earlier terminated as provided in Article 27.0, shall terminate on the termination date set forth in the Contract. Unless specified elsewhere in the Contract, the effective date of the Contract shall be the earlier of the date on which Contractor begins performance hereunder or the date of the latter signature on the Contract.

4.0 RELATIONSHIP OF THE PARTIES

- 4.1 Contractor and all of its employees and Subcontractors are, with respect to Owner, independent contractors. Contractor will be solely responsible for the supervision, direction, and control of its employees and Subcontractors. Contractor is responsible for the payment of all compensation, benefits, and employment taxes with respect to the Contractor's employees.

5.0 ASSIGNMENT AND SUBCONTRACTING

- 5.1 Contractor shall not assign or otherwise dispose of the Contract, or any obligations hereunder, without the written consent of Owner. Any assignment or disposal without the written consent of Owner shall be null and void.
- 5.2 Prior to entering into any subcontract, Contractor shall submit to Owner a subcontractor data sheet that includes the name and address of the Subcontractor and the scope of work proposed to be included under such subcontract. Within five (5) Business Days of receipt of a Subcontractor data sheet, Owner may reject such Subcontractor without cost or contract extension by giving written notice of such rejection to Contractor.
- 5.3 Contractor is responsible for the selection of any Subcontractor and for the Subcontractor's proper performance of the Work assigned to it. If the work of a Subcontractor is not in compliance with the Contract requirements, Contractor shall take immediate steps to bring the Subcontractor's work into compliance and, at Owner's written request, terminate its contractual relationship with the Subcontractor as it relates to the Work at no cost to Owner.

6.0 LABOR RELATIONS

- 6.1 Contractor shall comply with any project, national or local labor agreements that are applicable to the Work or Site. Contractor shall cooperate with Owner and other contractors in establishing and maintaining labor work rules and practices.
- 6.2 When the Work is performed by building and construction trades labor, a pre-job conference shall be held with local labor representatives prior to starting Work. Owner shall be afforded the opportunity to attend and participate in pre-job conferences.
- 6.3 Contractor shall provide immediate notice to Owner of any actual or potential labor dispute that may delay the timely, efficient and productive performance of the Work.
- 6.4 Contractor shall inform and cooperate with Owner on labor matters. Contractor shall consult with Owner prior to rendering its decision(s) on labor matters that may impact the timely, efficient and productive performance of the Work.
- 6.5 Contractor shall exercise its management rights contained in applicable labor agreements to establish, maintain, and enforce work rules conducive to timely, efficient, productive and harmonious work operation. Contractor shall take the necessary steps available to resolve grievances, jurisdictional disputes, or other violations of collective bargaining agreements.

7.0 SAFETY AND SECURITY

- 7.1 Contractor shall perform the Work in a safe and careful manner, provide first aid facilities and transportation, and use such safety devices and methods as are necessary to protect its employees, agents, Subcontractors, Owner's employees and agents, other contractors and the public from bodily injury and property damage.
- 7.2 Contractor shall comply with and enforce all laws, rules and regulations applicable to safety and health standards, including, but not limited to, the Occupational Safety and Health Act of 1970 (OSHA) and any revisions of OSHA or successor legislation.
- 7.3 Contractor shall comply with project and Site safety and security rules and all procedures issued by Owner, provided that such rules and procedures do not conflict with OSHA or other safety laws, rules or regulations. Contractor shall assign a competent person at all times to manage, coordinate and enforce its safety program during performance of the Work.
- 7.4 Contractor shall provide Owner with Material Safety Data Sheets (MSDS) for all applicable materials prior to delivery to Owner's Site.
- 7.5 Contractor shall obtain Site permits or approval from Owner for its vehicles, any excavation, use of explosives, access to restricted areas, use of Owner's Equipment, tools and facilities, and other similar activities.
- 7.6 Owner will arrange all necessary clearances on energized equipment, electrical and communications circuits, piping systems or other operational equipment. Contractor shall notify Owner requesting the clearances prior to the scheduling of such Work. Contractor shall comply with Owner's clearance permit system regarding tagout and lockout of electrical and mechanical systems and other equipment.
- 7.7 Contractor shall fully inform Owner in writing regarding the types, quantities and use of any hazardous materials brought on the Site; the types and quantities of hazardous wastes being generated from the Work; and Contractor's program for proper storing, handling and disposal of such materials in a safe and secure manner.

- 7.8 Contractor shall immediately inform Owner of all regulatory safety, health and environmental inspections, citations and penalties associated with the Work. Contractor shall provide Owner with written reports and copies of all documents submitted to or by regulatory agencies and insurance companies.
- 7.9 Contractor shall promptly inform Owner of any injuries to its employees, agents, Subcontractors, or other persons arising out of the Work that require medical treatment.
- 7.10 Contractor shall obtain, maintain, and properly complete all record keeping required by regulatory agencies. Upon request, Contractor shall provide Owner with copies of all logs, reports and other records.
- 7.11 Contractor shall investigate all accidents resulting in personal injury, property damage, or near misses to determine root cause(s) and corrective action(s). Upon request, Contractor shall provide Owner with a copy of investigative reports, including all documents submitted to insurance companies.
- 7.12 All of Contractor's employees, agents, Subcontractors, vehicles, trailers, etc. entering or leaving the Site are subject to inspection at any time by Owner.
- 7.13 If a safety violation or other unsafe condition causes imminent danger, Owner may immediately shut down the Work involved without advance written notice.
- 7.14 Contractor and all Subcontractors performing Work at Site must have a substance abuse program. This program must apply to all personnel. Minimum requirements of this program shall include pre-hire testing, testing for cause and if requested, random testing. Screening substances and their associated cut-off limits are listed below.

Drug Classes	Screening Cut-Off Limit (ng/ml)	Confirmation Cut-Off Limit (ng/ml)
Amphetamines	1,000	500
Benzoylcegonine	300	150
Cannabinoids	50	15
Opiates	2,000	2,000
Phencyclidine	25	25

Blood & Breath alcohol content : .02% per Department of Transportation.

Testing shall be performed by a testing facility certified by Department of Health & Human Services. Personnel must have evidence of having tested negative within a year prior to employment. Owner will accept conditional employment predicated upon (a) employee(s) furnishing evidence that they have submitted to testing within forty-eight (48) hours of initial employment and (b) employee(s) furnishing evidence of negative test results within five (5) work days of initial employment. Contractor shall ensure personnel are "drug free". Owner reserves the right to examine evidence outlined herein. Contractor's program shall incorporate reciprocity on "drug free" employee verification to minimize Owner's economic impact and employee recertification while maintaining the program's intent.

- 7.15 If required by Owner, Contractor must meet certain security criteria set forth herein.
 - 7.15.1 Contractor shall submit to Owner a copy of its background investigation process for Owner's review and file. If Owner, in its sole discretion, determines that Contractor's background investigations do not meet certain specific requirements, then Contractor, at

Page 6 of 23

its expense, must perform a background investigation that does meet Owner's certain specific requirements on each individual designated by Contractor to perform Work, or is performing Work on behalf of Contractor, for Owner (referred to herein for purposes of this Article, as an "individual"). Notwithstanding anything to the contrary stated herein, Owner reserves the right to conduct a background investigation on each individual at Contractor's expense.

- 7.15.2 Owner's certain specific requirements of background investigations include the following: (i) determination of whether an individual has been convicted of a felony crime in each state where the individual has resided during the past seven years; (ii) performance of the background investigation at the state level (in other words, to only search the records of the county in which the individual has resided during the past seven years is not a sufficient background investigation); and (iii) if the individual is to operate a motor vehicle while performing Work for Owner, then a state operator's license abstract must be completed in the states where the individual has been licensed as a vehicle operator during the past seven years.
- 7.15.3 If any background investigation reveals or indicates that an individual has been convicted of a felony crime, then the Contractor must notify the Owner prior to the individual commencing Work. Owner in its sole discretion shall have the option of barring from any Work Site any individual who has a reported felony conviction. Owner may audit or review specific Contractor screening files to ensure compliance with the Contract.
- 7.15.4 If an individual requires unescorted access to Owner's critical cyber assets, then Owner will conduct its own background investigation, which will include a Social Security Number verification. Additional specific provisions or requirements related to any Owner conducted background investigation pursuant to this Section 7.15.4 will be communicated to Contractor prior to implementation of such background investigation.
- 7.15.5 Contractor shall not perform any screening activities that violate the federal Fair Credit Reporting Act, Title VII of the Civil Rights Act of 1964 or any other applicable law in any circumstances. Contractor shall ensure that the substance and manner of any and all background investigations performed by Contractor conform fully to applicable law.
- 7.16 "Personally Identifiable Information" or "PII" means any information to which Contractor is provided access that could identify an individual either directly or indirectly including, without limitation to the individual's name, credit card numbers, social security number, biometric, bank account numbers, passport numbers, computer passwords or health, financial or employment information and other individual confidential information.
 - 7.16.1 To the extent that Work under the Contract requires Contractor to be given access to PII gathered and/or maintained by or on behalf of Owner, or in the event Contractor acquires access to or encounters any PII during performance of the Work, Contractor shall after receipt thereof, treat such PII as confidential and safeguard such PII from unauthorized use and disclosure. Upon request of Owner, Contractor shall have its employees execute a confidentiality agreement protecting PII. Contractor agrees not to appropriate such PII for its own use or to disclose such PII to third parties unless specifically authorized by Owner in writing. Contractor shall ensure that its employees will not discuss, divulge or disclose any such PII to any person or entity except those persons directly concerned with and only to the extent necessary to complete the performance of the Work. Contractor shall access, use and process PII and other data on behalf of Owner only for the purposes specified in the Contract.

- 7.16.2 Contractor shall comply with (i) NERC Reliability Standards as applicable, including without limitation, those relating to Critical Infrastructure Protection, (ii) Owner's security standards, and (iii) such further instructions as Owner may provide regarding the processing of such PII. Contractor shall inform Owner promptly if it has reason to believe that applicable law (or changes in applicable law) prevents Contractor from fulfilling the obligations relating to treatment of PII or other data under Owner's security standards and/or the Contract.
- 7.16.3 To the extent permitted by law, Contractor shall notify Owner promptly and act only upon Owner's instruction concerning: (a) any request for disclosure of PII or other data by law enforcement or other governmental authority; (b) any request by law enforcement or other governmental authority for information concerning the processing of PII or other data in connection with the Contract; or (c) any request received directly from an individual concerning his/her PII.
- 7.16.4 Contractor may not store PII on computers, mobile devices, including but not limited to cellular telephones and/or personal digital assistants, servers and/or storage devices including removable media (any of which, hereinafter known as a "Computer"), unless required for the performance of Work. Any such information must be deleted from a Computer, in a manner that ensures that it cannot be accessed or read, as soon as such storage is no longer required for the performance of Work.
- 7.16.5 Upon termination of the Contract or upon Owner's request, Contractor must promptly (a) return all PII in written form to Owner, and (b) delete all PII in Contractor's possession or control (on computer or in whatever other form or media) in a manner that ensures that this information cannot be accessed or read.
- 7.16.6 Contractor shall administer a monitoring process to ensure compliance with Section 7.16 and the related subsections hereof, promptly report any breaches to Owner, and implement immediate, appropriate corrective actions to contain and prevent recurrence. Contractor shall report to Owner immediately upon discovery of a real or suspected loss of PII. In the event of a breach of this provision or the occurrence of any other event regarding PII that requires notification under applicable law, Contractor agrees to assume responsibility for informing all such individuals in accordance with applicable law.
- 7.16.7 In addition to any remedy available to Owner under the Contract, Contractor acknowledges that any breach of Section 7.16 or the related subsections hereof by Contractor or its Subcontractors may subject Contractor to civil and criminal penalties. Contractor shall include the full text of Section 7.16 and the related subsections 7.16.1 through 7.16.7 in all appropriate subcontracts. However, including such provision in the subcontracts shall not relieve Contractor of its obligation to ensure compliance with the provisions of Sections 7.16.1 through 7.16.7.

8.0 MATERIALS

- 8.1 All Contractor-furnished materials, equipment and related products (referred to in this Article 8.0 as "Materials"), which are to be installed shall be new and meet the requirements of all applicable codes. Materials which will not become a part of the permanent installation are not required to be new. Owner reserves the right to reject materials which have not been previously used but which have been in storage for an unreasonable period of time. Title to and risk of loss of the Materials shall pass to Owner upon Final Acceptance of the Work. Title to the Materials shall be free and clear of all liens and encumbrances.

- 8.2 Contractor shall not substitute Materials specified in the Contract unless authorized by Owner in writing. Unless substitution has been so authorized, Contractor shall, at its expense, remove and replace any improperly substituted material.
- 8.3 Upon Owner's request, Contractor shall, at its expense, submit to Owner samples of Contractor-furnished materials. Contractor must obtain Owner's written approval before performing Work involving the use of materials for which samples have been requested. Approval by Owner shall not relieve Contractor from responsibility for complying with the requirements of the Contract and all applicable codes. Materials used shall conform to the approved samples. Contractor shall remove and replace nonconforming materials at its expense.

9.0 INSPECTION AND ACCEPTANCE

- 9.1 Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the Work performed conforms to the Contract requirements. Owner reserves the right to review and approve the adequacy of Contractor's inspection system. Contractor shall provide all quality control and quality assurance program information requested by Owner.
- 9.2 Owner shall have free access to the Work for inspection purposes. Owner's inspection, receipt or Initial Acceptance of the Work shall not relieve Contractor of its obligation to comply with the terms of the Contract.
- 9.3 Each party shall bear its own expenses in performing inspections, except that (a) Owner may use Contractor's facilities, ladders and scaffolds to perform inspections of the Work; (b) Contractor shall pay Owner's expenses in re-inspecting Work which was rejected as non-conforming to the Contract requirements in an earlier inspection; (c) Contractor shall pay the costs of uncovering and re-covering Work for Owner's inspection if Contractor failed to give Owner reasonable notice that the Work was ready to be covered; and (d) prior to Final Acceptance, if Owner requests an inspection of Work already completed which requires removing and tearing out Work, and the Work is found to be materially defective, Contractor shall pay the expenses of inspection and reconstruction, but if the Work is found to be in conformance with the Contract requirements, Owner shall pay the expenses of inspection and reconstruction.
- 9.4 Owner will not pay for defective work. Contractor shall repair or replace all defective work at its expense. Contractor shall promptly remove from the Site any Contractor-furnished materials that do not comply with the requirements of the Contract. If Owner-furnished materials have been used in any defective work, the cost of such materials shall be backcharged to Contractor.
- 9.5 Owner shall have the right to take possession of or use any part of the Work. Owner's possession or use shall not constitute Initial Acceptance or Final Acceptance of the Work.
- 9.6 Unless otherwise provided in the Contract, Final Acceptance by Owner shall be made as soon as practicable after all Work has been completed and inspected. Any part of the Work not rejected by Owner following Final Inspection shall be deemed to have achieved Final Acceptance.

10.0 SCHEDULE

- 10.1 Contractor shall perform the Work to meet the schedule date(s) set forth in the Contract. Contractor shall not commence Work until authorized by Owner to do so.
- 10.2 In a format acceptable to Owner, Contractor shall develop, update, maintain and provide to Owner a written schedule for execution of the Work. The schedule shall be time scaled, complete, and accurate in detail depicting Contract milestone dates, work activities and durations. Upon review and approval by Owner, this schedule shall become the Contract schedule. Updates to the Contract schedule shall

Page 9 of 23

be provided to Owner on at least a monthly basis. Updates shall depict actual progress measured against planned progress.

- 10.3 Contractor shall notify Owner within 24 hours of the first knowledge that any completion date(s) will not be met and shall, within five (5) Business Days thereafter, submit a detailed program depicting the plans and actions being taken to regain the lost time. The notice shall not limit any other rights or remedies afforded Owner under the Contract or by law.

11.0 TERMS OF PAYMENT

- 11.1 Except as otherwise provided in the Contract, the following terms of payment shall apply:

11.1.1 The Contract Price set forth in the Contract shall constitute full and complete payment for all Work.

11.1.2 Contractor shall submit invoices with proper documentation to Owner for the Work completed or for milestones achieved during the prior month. Owner may withhold all or any part of payment in an amount necessary to protect Owner from loss due to the occurrence, or imminent occurrence, of (i) Contractor's breach or failure to perform in accordance with the Contract, (ii) defective Work, (iii) Contractor's failure to pay any Subcontractor, (iv) other claims by Owner against Contractor, including indemnity claims, and (v) damages for delay or any agreed upon liquidated damages.

11.1.3 Owner shall pay 90% of each properly submitted and accepted invoice within forty five (45) days of receipt. The release of retention shall become due and payable forty five (45) days after the date of Final Acceptance of the Work.

11.1.4 Each invoice shall contain a statement that all bills for material and labor relating to the Work have been paid in full by Contractor, and there are no unpaid bills for which a lien could be filed. If requested by Owner, Contractor shall provide evidence of such payments. The final invoice for the Work shall be accompanied by a satisfactorily completed Affidavit of Completion in the form attached as Exhibit 1. Payment of the final invoice and retention constitutes a full and final release of Owner from all claims, damages, liabilities and obligations under the Contract.

- 11.2 Contractor shall promptly pay all of its Subcontractors.

12.0 CHANGES IN WORK AND EXTRA WORK

12.1 Change in Work

12.1.1 "Change Order" means a written order issued in accordance with this Article 12.0 documenting an addition to, deletion from, or other modification to the Work, including a change in the scope of Work, the Contract Price, the payment schedule, the completion dates, or the schedule for the Work.

12.1.2 Owner may issue a Change Order: (i) at Owner's option, or (ii) if requested by Contractor due to the occurrence of an event that entitles Contractor to a Change Order as determined by Owner.

12.1.3 If Owner issues a Change Order, Contractor shall perform the changed Work in accordance with the terms of the Contract and the issued Change Order.

Page 10 of 23

- 12.1.4 No order, statement or other conduct of Owner shall be treated as a change in Work until such change is authorized in writing by Owner.
- 12.1.5 Contractor shall not be entitled to a Change Order for conditions such as, but not limited to, (i) work which is of such a nature as to be normally included in the Work or is reasonably inferable from the Contract; (ii) any errors, omissions, non-performance, negligence, deficiencies or improper or defective work on the part of Contractor (including miscalculations, incorrect estimates, or other errors in Contractor's proposal for the Work); (iii) changes relating to refinement, minor correction and detailing of the Work or any part of the Contract; or (iv) other unallowable claims such as cost impacts not due to Owner and cumulative impact claims.
- 12.1.6 With respect to Contractor claims for additional compensation, Owner shall pay only incremental Direct Costs associated with the proposed changes and only to the extent that Contractor can demonstrate that the changes actually increased its costs of performance. Any claims for additional compensation based on a change to the Work or extra work must be material in nature, and Contractor must provide full documentation supporting all elements of such claims. For a reduction in the scope of Work or a change which reduces Contractor's costs, the Contract Price shall be adjusted downward. The payment for changes to the Work shall be complete compensation to Contractor for performing such changes, including any schedule or cost impacts on the Work.
- 12.1.7 If Owner requests in writing that Contractor furnish materials or equipment to be permanently incorporated in changed work, extra work or cost-plus work, Owner shall reimburse Contractor for such materials or equipment its incremental Direct Cost plus a percentage mark-up to be agreed upon by the parties. Requests for payment for materials and equipment shall be accompanied by copies of receipted invoices. Owner has the right to audit Contractor's requests for changes and the financial basis therefor.
- 12.1.8 If Contractor and Owner disagree on whether any particular work is within the scope of Work and such work must be completed to insure timely progress, Owner will issue a disputed Change Order to cover the disputed work. Contractor shall diligently proceed with the disputed work. By noon on the work day following performance of the disputed work, Contractor shall submit to Owner for review timesheets itemizing all labor and equipment hours expended on the disputed work and an itemized listing of Contractor furnished materials. Such review is not an admission of liability by Owner. Prior to Final Acceptance, each disputed Change Order will be resolved to the mutual agreement of the parties.
- 12.2 Extra Work
- 12.2.1 "Extra work" is work which is beyond Contractor's scope of Work. At Owner's request, Contractor shall perform extra work at the applicable prices set forth in the Contract. If the Contract prices are not applicable to the type of extra work to be performed, Contractor shall promptly submit a proposal to perform the extra work, which proposal shall become an amendment to the Contract upon acceptance by Owner. If Owner directs Contractor to perform extra work on an overtime basis, Owner shall reimburse Contractor the actual payroll cost of premium time for direct job labor. Contractor shall invoice and maintain separate cost records for each extra work authorization issued by Owner.
- 12.2.2 If Owner elects, Contractor shall perform extra work on a cost-plus basis. Cost-plus extra work shall be paid in accordance with Article 13.0.
- 12.3 Contractor waives all claims for additional compensation for changes in work and extra work not made strictly in accordance with the terms of this Article 12.0.

13.0 REIMBURSEMENT FOR COST-PLUS WORK

- 13.1 Direct labor costs will be reimbursed at the actual payroll costs of direct labor wages, fringe benefits, payroll taxes and insurance required by collective bargaining agreements or by law, plus an agreed wage mark-up. Copies of certified payrolls and time sheets shall be provided to Owner for review and approval. Contractor shall not invoice Owner for social security, unemployment, workers' compensation, or other federal, state or local taxes or insurance at rates which exceed Contractor's actual costs.
- 13.2 Owner will pay Contractor actual invoice costs for subcontracted work, provided Owner has approved payment terms in advance of performing the work, plus an agreed mark-up.
- 13.3 Contractor-furnished permanent materials and equipment costs will be reimbursed at actual invoice costs plus an agreed mark-up.
- 13.4 Construction equipment costs will be reimbursed based on actual usage time during the performance of Work and established rental rates not to exceed monthly rates set forth in the "Rental Rate Blue Book for Construction Equipment" adjusted for geographical region as published by Dataquest or other basis acceptable to Owner. Hourly rates shall be established by taking the monthly rate divided by 176 hours per month.
- 13.5 Small tools and consumables costs will be reimbursed based on agreed rates.
- 13.6 Field supervision, clerical, safety and other non-direct labor costs will be reimbursed at agreed billing rates, except that reimbursement for these costs for cost plus extra work shall require the prior review and approval of Owner.

14.0 BACKCHARGES

- 14.1 Owner may impose backcharges against Contractor or deduct backcharges from monies owed to Contractor for performance or reperformance by Owner or others of Work, including but not limited to, costs associated with defective work, nonperformance by Contractor, termination for cause, clean-up and disposal of debris, damages to Owner's tools and equipment and warranty repairs. Contractor will be responsible for the cost of such performance or reperformance plus a fifteen percent (15%) administrative charge.

15.0 TAXES

- 15.1 The Contract Price shall include, and the Contractor shall pay, all taxes and assessments for unemployment insurance, workers' compensation, social security and disability benefits, and other taxes which are based upon the compensation paid to persons employed by Contractor or its Subcontractors for the performance of any Work under the Contract.
- 15.2 Except as provided below, the Contract Price shall include all applicable foreign, federal, state and local taxes payable by Contractor with respect to the Contract.
 - 15.2.1 Contractor Purchases. If Owner specifies that tangible personal property to be incorporated into real property as defined for sales and use tax purposes or taxable services to be purchased by Contractor from vendors or Subcontractors qualify for exemption from sales or use taxes, Contractor shall not include sales or use taxes on such exempt tangible personal property or services in the Contract Price. Unless otherwise specified: a) consumable materials and supplies or Contractor's tools and equipment that are not incorporated into the Work or the overall project are not eligible for exemption

and the Contract Price shall include, and Contractor shall pay, any sales or use taxes on such items; and b) Contractor will use its own properly-executed exemption or resale certificate, and not Owner's direct pay permit, to make exempt purchases of tangible personal property or services from vendors or Subcontractors.

- 15.2.2 Owner Purchases from Contractor. With respect to any Owner purchases from Contractor of tangible personal property not incorporated into real property as defined for sales and use tax purposes or taxable services, Owner shall provide to Contractor its direct pay permit (if Owner has been issued a direct pay permit) or an appropriate exemption certificate required to relieve the Contractor of its responsibility to collect sales or use tax from the Owner. If Owner provides Contractor such direct pay permit or exemption certificate, sales or use taxes on Owner purchases from Contractor of tangible personal property or taxable services shall not be collected from Owner or included in the Contract Price. Unless otherwise approved or directed by Owner in writing, Contractor shall not use Owner's direct pay permit to make exempt purchases of tangible personal property or taxable services from vendors or Subcontractors.
- 15.2.3 Contractor Cooperation. Contractor shall take all steps reasonably necessary to ensure that Contractor's purchases from vendors or Subcontractors of items of tangible personal property or services are exempt from sales and use tax pursuant to any applicable exemption pursuant to the law of any U.S. jurisdiction or its political subdivisions.

16.0 INSURANCE

- 16.1 Contractor shall at its sole expense, procure and maintain, and shall cause its Subcontractors to procure and maintain, throughout the term of this agreement except as set forth in Section 16.5, the following types of insurance with the following, minimum limits:
- 16.1.1 Workers' compensation insurance in accordance with all jurisdictions where Contractor has operations including where the Work is to be performed. If Contractor is a non-subscriber to workers' compensation evidence of insurance equivalent to workers' compensation must be provided.
- 16.1.2 Employer's liability in an amount not less than \$1,000,000.
- 16.1.3 Business automobile insurance covering all Owned, Non-owned and Hired Autos in an amount not less than \$5,000,000 per occurrence.
- 16.1.4 Commercial general liability insurance covering claims of bodily injury and property damage in an amount not less than \$5,000,000 per occurrence.
- 16.1.5 Aircraft liability insurance with a combined limit of not less than \$10,000,000. Such insurance shall be required only if the Contractor or its Subcontractors shall utilize an aircraft in the performance of the Work.
- 16.1.6 If Contractor (or any of its Subcontractors) are engaged in operations which use marine vessels or floating equipment, or which are subject to maritime jurisdiction, the following insurance shall be required: Marine Liability insurance (including Jones Act and maritime employer's liability if operations are subject to federal jurisdiction) and pollution liability (under terms equivalent to current W.Q.I.S. policy provisions if operations are subject to federal jurisdiction) in amounts not less than \$10,000,000 per occurrence.

Page 13 of 23

- 16.1.7 Professional liability insurance and/or Errors and Omissions insurance in an amount not less than \$5,000,000. Such insurance shall be required only if the Work includes professional liability exposures.
- 16.1.8 "All risk" property insurance covering the full replacement cost of Contractor's personal property.
- 16.2 To the extent permitted by law, Contractor shall waive, and shall cause each of its insurers to waive, any and all rights of recovery, by subrogation or otherwise, against Owner and its affiliates, officers, directors, employees, agents and assigns of any type. Each of Contractor's insurance policies shall be primary to and non-contributory with any insurance or self-insurance of Owner.
- 16.3 The Commercial General Liability, the Business Automobile, and (if applicable) the Aircraft Liability and Marine Liability insurance shall include Owner as an additional insured with respect to Owner's liability arising out of the operations of Contractor. Such coverage shall also include blanket contractual coverage and contain no exclusion for explosion, collapse, or underground property damage (XCU coverage).
- 16.4 The insurance required by this Article 16.0 is in addition to and separate from any other obligations contained in the Contract.
- 16.5 Products and/or completed operations coverage shall be maintained for a period of five (5) years after the completion of the Work. If any of the policies indicated above are placed on a "claims-made" basis, such coverage shall be maintained for a period of not less than five (5) years following the completion of the Work.
- 16.6 Any deductibles or retentions on any of the policies required herein shall be the sole responsibility of the Contractor.
- 16.7 The above referenced limit requirements may be met by any combination of umbrella or excess and primary policies so long as the total limit of insurance requirement is met. The required coverages referred to herein shall in no way affect, nor are they intended as a limitation of, Contractor's liability with respect to its performance of the Work. The limits of insurance indicated herein are minimum requirements and are in no way intended to limit Contractor's liability.
- 16.8 In all cases where Contractor's employees (defined to include Contractor's direct, borrowed, special, or statutory employees) are covered by the Louisiana Worker's Compensation Act, La. Rev. Stat. Ann. 23:1021 et seq., Owner and Contractor agree that pursuant to Section 23:1061 (A) (1) all Work performed by Contractor and its employees under the terms and conditions of the Contract is an integral part of Owner's operations and is essential to Owner's ability to generate its goods, products and services. Additionally, Owner and Contractor agree that for purposes of Section 23:1061 (A) (3) Owner is the principal or statutory employer of Contractor's employees. Irrespective of Owner's status as the statutory employer or special employer of Contractor's employees, pursuant to Section 23:1031 (C), Contractor shall remain primarily responsible for the payment of Louisiana Worker's Compensation benefits to its employees, shall indemnify Owner from any and all claims of Contractor's employees or its Subcontractor's employees and shall not be entitled to seek contribution for any such payments from Owner.
- 16.9 Upon inception of the Contract and prior to commencement of Work, Contractor shall provide Owner with an acceptable certificate of insurance evidencing the insurance required under Article 16. Contractor will not be permitted to bring its employees, materials or equipment onto the Site until Owner receives from such evidence of insurance. Contractor also must provide an updated certificate of insurance at any time during the Contract term upon Owner's request. Contractor

Page 14 of 23

shall immediately notify Owner of cancellation or of any material changes in the insurance policies required herein. If such insurance policies are subject to any exceptions to the terms specified herein, such exceptions shall be explained in full in such certificates. Owner may, at its discretion, require Contractor to obtain insurance policies that are not subject to non-standard exceptions.

- 16.10 In lieu of Sections 16.1 thru 16.9, the Owner may elect to implement an Owner Controlled Insurance Program ("OCIP"). If an OCIP is implemented, all Contractor(s) and Subcontractor(s) of any tier and such other persons or entities as the Owner may designate as enrolled parties, may, at Owner's option, be required to enroll and participate. Owner shall procure and maintain at its own expense during the performance of this Contract and a stipulated completed operations period, such insurance coverage as Owner deems appropriate on behalf of enrolled parties. Eligible Contractor(s) and Subcontractor(s) must submit all necessary enrollment forms for acceptance into the OCIP, and agree to the terms of the Owner's project safety standards. Owner and Contractor agree that the terms of the OCIP as contained in amendments to this Contract and the OCIP Contractor Manual shall control. The OCIP does not relieve any Contractor or Subcontractor from its obligations to procure coverage for offsite operations or coverages not included in the OCIP. In the event an OCIP is implemented, amended insurance requirements for enrolled parties will be provided.
- 16.11 The furnishing of insurance by Owner through an OCIP will in no way relieve or limit any enrolled party of any responsibility, liability, or obligation imposed by the contract documents or by law, including without limitation any indemnification obligations which any enrolled party has to the Owner thereunder.

17.0 INDEMNIFICATION

- 17.1 The laws of the state where the Work giving rise to the claim is performed shall apply to this Article 17.0.
- 17.2 **TO THE EXTENT PERMITTED BY LAW, CONTRACTOR SHALL INDEMNIFY, DEFEND AT ITS EXPENSE, AND SAVE OWNER HARMLESS FROM, ANY LIABILITIES, COSTS AND CLAIMS, INCLUDING JUDGMENTS RENDERED AGAINST, AND FINES AND PENALTIES IMPOSED UPON, OWNER AND REASONABLE ATTORNEYS' FEES AND ALL OTHER COSTS OF LITIGATION (COLLECTIVELY, "LIABILITIES"), ARISING OUT OF THE CONTRACT, INCLUDING INJURIES, DISEASE OR DEATH TO PERSONS, OR DAMAGE TO PROPERTY, AND ENVIRONMENTAL CLAIMS AND LIABILITIES, CAUSED BY CONTRACTOR, ITS EMPLOYEES, AGENTS OR SUBCONTRACTORS, OR IN ANY WAY ATTRIBUTABLE TO THE PERFORMANCE OF THE CONTRACT, EXCEPT THAT CONTRACTOR'S OBLIGATION TO INDEMNIFY OWNER SHALL NOT APPLY TO ANY LIABILITIES ARISING FROM OWNER'S SOLE NEGLIGENCE. TO THE EXTENT PROVIDED IN THIS SECTION, IN STATES OTHER THAN OHIO, MICHIGAN, KENTUCKY, TENNESSEE, MISSOURI, OKLAHOMA, VIRGINIA, AND WEST VIRGINIA, CONTRACTOR AGREES TO INDEMNIFY OWNER FOR LIABILITIES ARISING FROM OWNER'S ACTS AND OMISSIONS, NEGLIGENT OR OTHERWISE. OWNER SHALL HAVE THE RIGHT TO SELECT ITS OWN COUNSEL AND TO HAVE COUNSEL SEPARATE FROM CONTRACTOR, ALL AT CONTRACTOR'S EXPENSE.**
- 17.3 **WITH RESPECT TO CLAIMS AGAINST OWNER BY CONTRACTOR'S EMPLOYEES, CONTRACTOR UNDERSTANDS AND AGREES THAT THIS INDEMNIFICATION OBLIGATION SHALL NOT BE LIMITED IN ANY WAY BY, AND CONTRACTOR EXPRESSLY WAIVES, ITS IMMUNITY AS A COMPLYING EMPLOYER UNDER ANY**

APPLICABLE WORKERS' COMPENSATION LAW, BUT ONLY TO THE EXTENT THAT SUCH IMMUNITY WOULD BAR OR AFFECT RECOVERY UNDER OR ENFORCEMENT OF THIS INDEMNIFICATION OBLIGATION. With respect to the State of Ohio, this waiver applies to Section 35, Article II of the Ohio Constitution and Ohio Rev. Code Section 4123.74.

- 17.4 **CONTRACTOR SHALL BE LIABLE FOR REASONABLE ATTORNEYS' FEES AND ALL COSTS OF LITIGATION ASSOCIATED WITH ENFORCEMENT OF ALL INDEMNITY OBLIGATIONS SET FORTH IN THE CONTRACT.**

18.0 LIMITATION OF LIABILITY

- 18.1 Except as expressly provided herein, neither party shall be liable to the other for any incidental, indirect, special, punitive or consequential damages. Contractor must bring any cause of action arising under the Contract within one year from the time the cause of action accrues.

19.0 LIENS

- 19.1 To the extent permitted by law, Contractor shall not file or permit to be filed any lien with respect to the Work and hereby expressly waives any right to file or cause to be filed a lien. Contractor, in its subcontracts, shall require all Subcontractors to expressly waive the right to file any liens against Owner's property, and, if requested, provide Owner with copies of such waivers.
- 19.2 In the event any claim is asserted or any lien filed against Owner or its property, or notice of lien is provided to Owner in violation of this provision, further payment to Contractor shall not become due under the Contract until the claim is satisfied or the lien released without cost to Owner and Contractor shall provide Owner with evidence of payment relating to such claim or lien. If Contractor fails to settle any claim or secure the release of any lien, Owner may take whatever steps it deems necessary to settle the claim or release the lien, including bonding off the lien. Owner may deduct its costs and expenses for settling any claim or securing the release of any lien filed by Contractor or its Subcontractors from any money due or to become due to Contractor under the Contract. If final payment has been made, Contractor shall reimburse to Owner its costs to settle any claim or secure the release of any lien arising out of the Contract.

20.0 INTELLECTUAL PROPERTY

- 20.1 Contractor warrants that its performance of the Work will not infringe upon or violate any trademarks, patents, copyrights, trade secrets or other third party property rights. If the performance of Work is held in any action to constitute infringement, or the use of the Work is enjoined, Contractor, at its expense, shall procure for Owner the right to continue use of the Work, or replace the Work with non-infringing materials or methods satisfactory to Owner, or modify the Work in a manner satisfactory to Owner so that the Work becomes non-infringing. Contractor agrees to indemnify and save Owner harmless from and against any liability or damages, including attorneys' fees, arising out of any alleged infringement or violation.
- 20.2 All inventions, discoveries, documents, works of authorship, methods, and the derivative works thereof, resulting from the Work, including patents, patent applications, copyrights, trade secrets and other intellectual property (collectively "Intellectual Property"), shall be the sole and exclusive property of Owner. Contractor shall promptly inform Owner of the development of any such Intellectual Property and does hereby assign and transfer the entire right, title and interest, together with all rights of priority in and to such Intellectual Property to Owner. Contractor shall promptly cooperate with Owner in signing any additional documentation necessary to assign and perfect ownership of such Intellectual Property in Owner or to allow Owner to register its property rights therein. Contractor warrants that it has obtained written agreements from its employees and

agents as necessary to effectuate the purpose of this Section. The Intellectual Property assigned and transferred to Owner shall be the Confidential Information of Owner.

- 20.3 Contractor grants Owner a nonexclusive, nonrevocable, perpetual, fully paid license to utilize Contractor's intellectual property existing separate from the Contract, including inventions, discoveries, works or authorship, methods, and trade secrets, regardless of whether such are the subject of patents, copyrights or other intellectual property protection, to the extent necessary for Owner to achieve the full benefit of the Work.
- 20.4 Contractor shall not use Owner's name or logo in marketing, endorsements, or other business purposes without prior written consent from Owner.

21.0 DRAWINGS AND DATA

- 21.1 Contractor shall furnish for Owner's review, prior to commencement of Equipment manufacture or fabrication, general and detailed drawings of the Equipment in the format requested. Such drawings shall be certified as to accuracy and completeness and shall show information adequate to enable Owner to design and provide suitable clearances. If required by the Contract or any code, law or agency, Contractor will provide professional engineer or architect sealed drawings and reports for the state where the Equipment is to be finally installed. Figures shall take precedence in all cases over scaled measurements on drawings. Where obvious discrepancies exist, Contractor shall consult with and follow the instructions of Owner. Owner's approval of Contractor's drawings shall not relieve Contractor of its obligation to comply with the Contract requirements.
- 21.2 All written data, such as drawings, plans, reports, designs and specifications, prepared by Contractor for Owner during the performance of Work shall become the property of Owner. Such data, together with all data furnished by Owner and lent to Contractor for return, shall be delivered to Owner upon request, or upon completion of the Work or termination of the Contract. For clarification purposes, Owner shall have the unrestricted right to use, release, disclose, copy and reproduce such data for purposes of operation, maintenance, analysis, testing, cleaning, erection, improvement or modification of any facilities owned or operated by Owner. Contractor shall cooperate with Owner by executing such documents as are necessary to assign and perfect ownership in Contractor provided data to Owner.

22.0 CONFIDENTIALITY

- 22.1 "Confidential Information" means any confidential or proprietary information, whether written, oral, or visual, whether or not it constitutes a trade secret under applicable law. "Confidential Information" includes, but is not limited to, business plans and methods; customer information; engineering, operating and technical data; and the dates of Owner's outage schedule, information concerning the Work, and Owner's activities. "Confidential Information" does not include information that (a) has become part of the public domain other than by acts or omissions of the recipient; (b) has been furnished or made known to the recipient by a third person as a matter of legal right and without restriction on use; (c) was in the recipient's possession prior to disclosure by the disclosing party without restriction on use; or (d) is independently developed by the recipient without access to the Confidential Information.
- 22.2 Subject to Section 22.5, each party agrees (a) to protect the Confidential Information of the other with at least the same degree of care used to protect its own Confidential Information; (b) not to use (except for the purpose described herein), publish or disclose to third parties such Confidential Information; and (c) upon the request of the disclosing party, to promptly deliver to the disclosing party all written copies of its Confidential Information. Notwithstanding the foregoing, a recipient shall be entitled to disclose Confidential Information to its officers, employees, affiliates (including any joint ventures of which Owner or any of its affiliates are a member and the other

Page 17 of 23

members of such joint ventures), agents, lenders, attorneys and other advisors (collectively, "Representatives"), provided that the Representatives shall be informed of the confidentiality obligations provided herein.

- 22.3 If either party is required pursuant to applicable law or otherwise becomes legally compelled to disclose any of the Confidential Information, such party shall promptly advise the disclosing party in order that the disclosing party may seek a protective order or such other remedy as the disclosing party may consider appropriate in the circumstances. In any event, the compelled party may disclose only that portion of the Confidential Information which such party is legally required to disclose in the judgment of the party's legal counsel without any liability to the disclosing party hereunder and such disclosure shall not be a breach of this Section.
- 22.4 Contractor shall require its Subcontractors, if any, to expressly comply with the confidentiality provisions as set forth herein.
- 22.5 All documents prepared by Contractor for Owner during the performance of Work that incorporate, in whole or in part, information owned or provided by Owner shall not be marked or designated in any way as the confidential or proprietary information of Contractor without also stating that Owner has rights in such documents. Owner shall have the right to question the designation of Confidential Information by Contractor and Contractor agrees to provide Owner with reasonable cooperation in explaining such designation. Contractor agrees that Owner's acceptance of documents containing the Confidential Information of Contractor shall not be construed as a restriction on Owner's rights to use, release, disclose, distribute, copy or reproduce the documents.

23.0 DEFAULT

- 23.1 The occurrence of any of the following shall constitute an "Event of Default":
- 23.1.1 Contractor files a petition in bankruptcy, or if its creditors file an involuntary petition in bankruptcy, or if it makes a general assignment for the benefit of its creditors, or if a receiver is appointed on account of its insolvency.
- 23.1.2 Contractor (a) fails to maintain the schedule set forth in the Contract, or (b) fails to promptly pay Subcontractors for material or labor, or (c) commits repeated or substantial violations of laws, rules, regulations or policies, or (d) fails to perform in accordance with the Contract, and Contractor fails to take corrective action or submit an acceptable plan within two (2) Business Days after the receipt of a notice of non-conformance from Owner.
- 23.2 Upon an Event of Default, Owner may take any or all of the following actions without affecting the Contract Price or schedule:
- (a) Owner may direct Contractor to cease performance on all or part of the Contract until satisfactory corrective action has been taken;
 - (b) Owner may have others take corrective action necessary to achieve compliance with the Contract. Owner may deduct the cost of such corrective action by others from any monies due to Contractor. Corrective action by others shall be taken when, in the judgment of Owner, the noncompliance threatens safety, unreasonably interferes with or delays the work of others, or otherwise creates a situation the resolution of which cannot be delayed without adversely impacting quality, cost or timely completion;
 - (c) Owner may pursue damages for delay under the terms of Article 24.0;

- (d) Owner may suspend the Contract under Article 26.0; and/or
 - (d) Owner may terminate the Contract under the terms of Section 27.1
- 23.3 Each of Owner's rights set forth above shall be cumulative and additional to any other rights or remedies provide in law or equity or otherwise.
- 24.0 DAMAGES FOR DELAY
- 24.1 Contractor shall be liable for any direct damages incurred by Owner arising out of Contractor's failure to perform on time.
 - 24.2 In lieu of Section 24.1, if the parties have agreed to liquidate the amount of direct damages resulting from Contractor's delay, the parties agree that such damages which might be incurred by Owner as a result of Contractor's delay in performance are uncertain and would be difficult to calculate. The parties agree that the liquidated damages contained in the Contract would be reasonable and fair compensation for late performance. Contractor commits to pay and Owner agrees to accept such sum as liquidated damages and not as a penalty in the event of late performance.
- 25.0 FORCE MAJEURE
- 25.1 Neither party shall be in breach of the Contract to the extent that any delay or default in performance is due to a Force Majeure Event. The term, "Force Majeure Event", shall mean any cause beyond the reasonable control of the delayed or defaulting party, including, but not limited to, acts of God including unusually adverse weather, fire, and epidemic; acts of public enemy including war, acts of terrorism, riot, and civil disturbance; and national labor strikes, which by exercise of due foresight such party could not have been expected to avoid or overcome. Contractor's inability to obtain adequate and sufficient labor in order to maintain progress of the Work shall not constitute a Force Majeure Event. No delay in performance resulting from a Force Majeure Event shall result in any liability on the part of Owner. Notwithstanding the preceding sentence, in the event of a delay caused by any act or failure to act on the part of Owner, Contractor's sole remedy shall be as set forth in Article 12.0.
 - 25.2 The delaying party shall immediately notify the other party of the beginning of a delaying event, and shall confirm the notice in writing within ten (10) Business Days of the beginning of the event. The notice shall contain a detailed account of the delay, including the cause of the delay, an estimate of the duration of the delay, an estimate of the delay's impact to the schedule, and the plan to mitigate the effects of the delay.
 - 25.3 If Contractor is the delaying party, and the delay is a Force Majeure Event as defined in Section 25.1, Owner shall grant Contractor an extension of the time for performance, to be mutually agreed upon by Contractor and Owner. The extension of time granted as a result of a Force Majeure Event shall in no case exceed the length of the delay and such extension may be withheld or reduced to the extent Contractor does not provide notice in accordance with Section 25.2. If Owner so requests, Contractor shall expedite its schedule to mitigate the effects of the excusable delay. Owner shall pay incremental, Direct Costs incurred by Contractor for expediting at Owner's request.
- 26.0 SUSPENSION
- 26.1 Owner may at any time suspend all or any part of the Work. Owner shall provide Contractor written notice verifying the suspension date. Immediately upon receipt of the suspension notice, Contractor shall take the necessary actions to comply with the suspension notice.

- 26.2 Owner shall pay Contractor in accordance with the terms of payment set forth in the Contract for the Work completed prior to the time of suspension and for the incremental, Direct Costs that result from Contractor's compliance with the suspension notice.
- 26.3 Owner may, at any time during the suspension period, either terminate the Contract in accordance with Section 27.2, or authorize the Work or any portion thereof to be restarted. Owner shall pay Contractor the incremental, Direct Costs associated with the restart of the Work and shall resume payments to Contractor in accordance with the terms of payment under the Contract thirty (30) days after the restart of Work.
- 26.4 The schedule shall be adjusted to provide for a reasonable extension of time for Contractor's performance.

27.0 TERMINATION

27.1 Termination for Cause

- 27.1.1 Upon an Event of Default, Owner may terminate the Contract upon written notice to Contractor.
- 27.1.2 In the event of such termination, Contractor shall immediately prepare and submit to Owner an itemization of the Work completed by Contractor. Owner may require Contractor to leave the Site. Owner may take over such Work and complete it, or have the Work completed by others. Owner may take possession of and utilize in completing the Work Contractor's materials, Equipment to be installed, supplies, tools and equipment at the Site.
- 27.1.3 Contractor shall not be entitled to further payment until all of the Work is completed in its entirety and Final Acceptance has been achieved. If the cost of completion exceeds the unpaid balance under the Contract, Contractor shall pay the difference to Owner within thirty (30) calendar days of demand.
- 27.1.4 In the event that a court determines that the termination was not properly a termination for cause, pursuant to Section 27.1.1, Contractor's remedy shall be limited to the payments permitted in accordance with Section 27.2.

27.2 Termination for Convenience

- 27.2.1 Owner may terminate the Contract, in whole or in part, for its convenience. Owner will give Contractor written notice of termination specifying the extent to which the Contract is terminated and the date, immediately or otherwise, on which termination becomes effective.
- 27.2.2 Upon termination for convenience, Contractor will comply with instructions in the notice of termination regarding delivery to Owner of all Work in progress and all completed Work, which shall become the property of Owner upon delivery.
- 27.2.3 In the event of such termination, Contractor shall receive payment, including the retained percentage, for the Work satisfactorily performed up to the time of such termination. In addition, Owner shall reimburse Contractor for incremental, Direct Costs resulting from the termination, provided that compensation was not otherwise made for such costs. Final payment shall be made upon the parties' agreement of the amount of the final invoice and Owner's receipt of an Affidavit of Completion in the

form of Exhibit I. Owner shall not be responsible for Contractor's lost profit on the terminated portion of the Contract.

28.0 MATERIALS AND WORKMANSHIP WARRANTY

- 28.1 Beginning upon Final Acceptance and for a period of one year thereafter, or for such period as may be specified elsewhere in the Contract, Contractor warrants that (a) it will perform the Work in accordance with the accepted standards of care and competence found in the applicable profession as such standards relate to and are commonly used in the electric utility industry and (b) all Contractor furnished materials and workmanship shall be free of any and all defects and shall be in conformity with the requirements of the Contract.
- 28.2 Subject to the provisions of Section 28.3, in the event that the material or workmanship does not comply with the warranty, Contractor shall, at no cost to Owner, promptly repair or replace such nonconforming material or workmanship with as little disruption to Owner's operations as practicable. Contractor shall be responsible for the total cost of correcting any defects, including but not limited to, the costs of materials, labor, any necessary equipment removal, disassembly, shipping, reinstallation and retesting of the installation. Owner shall give Contractor notice of observed defects with reasonable promptness. If nonconforming material or workmanship causes an outage or other delay of operations, Contractor shall make the repair or replacement on an overtime, maximum effort basis, at Contractor's expense.
- 28.3 If Owner directs Contractor to repair or replace any defect and Contractor fails to do so within a reasonable time, or if an emergency exists rendering it impracticable for Contractor to perform the repair or replacement, Owner may make or cause to be made such repair or replacement without affecting the validity of the warranty. Owner's cost for making the repair or replacement shall be deducted from the Contract Price or any unpaid portion thereof. If the unpaid portion of the Contract Price is insufficient to cover such cost, Contractor shall reimburse Owner.
- 28.4 Owner will not pay for any defective portion of the materials or workmanship until remedied by Contractor at Contractor's expense in accordance with the Contract requirements.
- 28.5 Owner must approve any proposed correction or alteration by Contractor of the materials or workmanship, or parts thereof, made at any time or at any location, before such correction or alteration is undertaken. Approval by Owner shall not relieve Contractor from responsibility for complying with the requirements of the Contract and all applicable codes.
- 28.6 Any materials or workmanship which are repaired or replaced pursuant to this Article 28.0 shall be warranted for a period of one year from the date of completion and acceptance of such repair or replacement, or for the remainder of the original warranty period, whichever is longer.
- 28.7 Contractor shall obtain, for the benefit of Owner, all available warranties from Subcontractors, vendors and suppliers of Contractor. Such warranties shall be in addition to the warranties set forth in this Article. If such warranties are in written form, Contractor shall provide Owner with the original warranties.

29.0 REPORTING OF COMPLAINTS

- 29.1 Contractor shall immediately report to Owner, in accordance with Article 33.0, the complete details of all complaints, including any OSHA violations and complaints received from governmental authorities, Subcontractors, laborers, other third parties or members of the public relating to the Work.

30.0 RETENTION AND EXAMINATION OF INFORMATION, BOOKS AND RECORDS

- 30.1 Owner reserves the right to audit records necessary to permit evaluation and verification of (i) claims submitted, (ii) Change Orders, and related overhead and general and administrative costs, and (iii) Contractor's compliance, in the performance of the Contract and its dealings with Owner, with (a) the Contract requirements; and (b) Owner's Code of Business Conduct governing business ethics. Owner's right to audit shall not extend to fixed, lump-sum or unit pricing.
- 30.2 Contractor shall cooperate with Owner and provide Owner with information and records ("information") pertaining to the Work as requested by governmental agencies, Owner, or courts of law.
- 30.3 Contractor shall retain for a period of three (3) years after Contract termination or expiration all information relating to the Work. Owner may audit and copy such information at Contractor's premises during regular business hours. If requested by Owner, Contractor shall submit to Owner a copy of each of its subcontracts. Contractor shall include in its subcontracts a provision granting Owner the rights against Subcontractors contained in this Article 30.0.

31.0 COMPLIANCE WITH LAWS

- 31.1 Contractor warrants that all materials and equipment supplied and all Work performed will comply with, and be manufactured, priced, sold and labeled in compliance with, all applicable federal, state and local laws, rules, regulations, orders and ordinances, including, without limitation, environmental protection, energy, safety and health, and labor laws and regulations and applicable industry codes and standards.
- 31.2 Unless exempted, Contractor shall comply with the equal employment opportunity clause in Section 202 of Executive Order 11246 and all applicable rules, regulations, and relevant orders pertaining to Executive Order 11246, Section 503 of the Rehabilitation Act of 1973, and Section 4212 of the Vietnam Era Readjustment Assistance Act of 1974, as amended. Contractor represents that it does not, and shall not for the term of the Contract, provide or maintain for its employees facilities that are segregated on the basis of race, color, religion, sex or national origin. Contractor represents that it will not assign its employees to perform any work related to the Contract at a location where facilities are segregated on the basis of race, color, religion, sex or national origin. Contractor agrees that it will not enter into any agreement to obtain goods or services relating to the Contract with any entity that provides, maintains or assigns its employees to work at locations where facilities are segregated on the basis of race, color, religion, sex or national origin. As used herein, "facility" means waiting rooms; work areas; restaurants and other eating areas; time clocks; locker rooms and other storage or sleeping areas, except as necessary to ensure privacy between male and female employees; parking lots, drinking fountains; recreation or entertainment areas; and transportation. If not otherwise exempted by Title 48 and to the extent applicable, Contractor will comply with 48 CFR §52.219-8, Utilization of Small, Small Disadvantaged, and Women-Owned Small Business Concerns, and 48 CFR §52.219-9, Small, Small Disadvantaged, and Women-Owned Small Business Subcontracting Plan. If not otherwise exempted by 41 CFR §60-1.5, Contractor represents that it will file all reports or other required information specified in 41 CFR §60-1.7.
- 31.3 Contractor shall indemnify and save Owner harmless from any and all costs or expenses arising out of any violations of such laws, ordinances and regulations.

32.0 PERMITS AND LICENSES

- 32.1 Contractor shall obtain all permits and licenses required by any regulatory authority for the performance of any portion of the Work, except that Owner shall obtain permits and licenses for all structures which are to become a permanent part of the Site. Before starting Work, Contractor shall submit to Owner a copy of all permits and licenses required by any such regulatory authority.
- 32.2 Contractor shall indemnify and save Owner harmless from any and all costs or expenses arising out of the failure of Contractor to obtain such permits and licenses.

33.0 NOTICES

- 33.1 Each party shall designate in writing a representative to receive any and all notices required under the Contract. Notices shall be in writing and shall be given to the representative designated to receive them, either by personal delivery, certified mail, facsimile, e-mail or any similar means, properly addressed to such representative. All notices shall be effective upon receipt, or upon such later date following receipt as set forth in the notice. Either party may, by written notice to the other, change the representative or the address to which such notices are to be sent. Contract shall be strictly construed and Contractor expressly waives any claims which do not strictly comply with the written notice requirements of the Contract.

34.0 SEVERABILITY

- 34.1 In the event that any of the provisions, or portions thereof, of the Contract are held to be unenforceable or invalid by any court, the validity and enforceability of the remaining provisions, or portions thereof, shall not be affected.

35.0 WAIVER

- 35.1 Either party's waiver of any breach of the Contract shall not be deemed to be a waiver of any other breach of the same or a different term of the Contract. Contractor agrees not to claim any waiver by Owner of such notice requirements based upon Owner's conduct or Owner having actual, verbal, implied, or constructive notice.

36.0 NON-DISCLOSURE

- 36.1 Except as required by law, regulation, or judicial or administrative order, neither party shall disclose the terms of the Contract without the consent of the other party. Notwithstanding the foregoing, Owner may disclose the terms of the Contract without the consent of Contractor (a) to any of its affiliated companies (including any joint ventures of which Owner or any of its affiliates are a member and the other members of such joint ventures); and (b) to any prospective transferee or purchaser of assets of Owner or any of affiliates.

37.0 HEADINGS

- 37.1 Headings are provided for the convenience of the parties, and shall not affect the interpretation of any provision.

38.0 AFFILIATED COMPANIES

- 38.1 Any indemnification of Owner or any limitation of Owner's or Contractor's liability under the Contract shall to the same extent apply to Owner's or Contractor's directors, officers, employees, agents, and affiliated companies (including any joint ventures of which Owner or any of its affiliates are a member and the other members of such joint ventures), including any directors, officers, employees and agents thereof.
- 38.2 The affiliated companies (including any joint ventures of which Owner or any of its affiliates are a member and the other members of such joint ventures) of the American Electric Power System are severally and not jointly liable for obligations arising hereunder.

39.0 APPLICABLE LAWS AND JURISDICTION

- 39.1 Except for Article 17.0, the rights and obligations of the parties arising out of the Contract shall be governed in all respects by the laws of the State of Ohio. Any reference herein to the laws of other states is made only to the extent that the laws of that state might apply, notwithstanding the intent of the parties that the laws of the State of Ohio should apply.
- 39.2 Contractor agrees that all actions and proceedings brought by Owner against Contractor may be litigated in courts located in the State of Ohio or the state where the work was performed. Contractor agrees that such courts are convenient forums and irrevocably submits to the personal jurisdiction of such courts. Contractor waives personal service of process and consents to service of process by certified or registered mail at the address designated for receiving notices under the Contract.

40.0 ENTIRE AGREEMENT

- 40.1 The Contract constitutes the entire agreement between the parties and supersedes all previous and collateral agreements or understandings with respect to the subject matter of the Contract. No waiver, alteration, amendment or modification of any of the provisions of the Contract shall be binding unless in writing and signed by duly authorized representatives of the parties.

41.0 BINDING EFFECT; NO THIRD-PARTY BENEFICIARIES

- 41.1 Subject to the restrictions on assignment in Section 5.1, the Contract shall be binding upon and shall inure to the benefit of the parties of their respective successors and permitted assigns.
- 41.2 No provision of the Contract is intended or shall be construed to be for the benefit of third party other than as set forth in Article 36.0.

42.0 EXECUTION; COUNTERPARTS

- 42.1 The Contract shall not be binding or effective until properly executed by each of the parties hereto. The Contract may be executed in any number of counterparts, each of which shall be deemed to be an original, and all of which, taken together, shall constitute but one and the same Contract, which may be sufficiently evidenced by one counterpart.

43.0 SURVIVAL

- 43.1 All of the terms of the Contract which by their nature extend beyond the expiration or termination of the Contract, including indemnification obligations, confidentiality obligations, limitations of liability, shall survive expiration or termination of the Contract and remain in full force and effect.

END OF DOCUMENT

EXHIBIT 1
Page 1 of 1

AFFIDAVIT OF COMPLETION

State of _____

County of _____

_____, being duly sworn, states that:
(Name of Affiant)

1. S/He is the _____ of
(Office held by Affiant)

(Legal Name of Contractor) (Contractor)

that has a contract with _____
(Legal Name of Owner)

(Owner) dated _____ (Owner's Contract No. _____)
(Contract Date) (Contract No.)

involving work on the Owner's property at _____
(Project Name)

located near _____
(City, State)

2. All of the Work required to be performed by the Contractor under said Contract has been performed. All bills and claims for material, labor and services to employees, Subcontractors, material suppliers, and others, covering the Work required to be performed under the Contract, have been paid in full by the Contractor. There are no unpaid amounts on the basis of which a lien has been filed, or can be filed, in connection with the Work performed under the Contract.

Signature of Affiant

Sworn to before me and subscribed in my presence this _____ day of _____, _____.

Notary



AEP: America's Energy Partner®

**SUPPLEMENTARY TERMS AND CONDITIONS
FOR FORESTRY CONTRACTS**

Prepared by:

Contract Services
American Electric Power
Service Corporation
1 Riverside Plaza
Columbus, OH 43215

June 24, 2011



AEP. America's Energy Partner®

**SUPPLEMENTARY TERMS AND CONDITIONS
FOR FORESTRY CONTRACTS**

TABLE OF CONTENTS

**SECTION AND
ARTICLE NO.**

HEADING

Introduction

Section 1 – General Supplementary Terms and Conditions (“General”)

- 1.1 Protection of Services
- 1.2 Cleanup and Disposal of Non-Vegetative Debris
- 1.3 Material Storage and Handling
- 1.4 Electrical Clearances
- 1.5 Permits and Easements
- 1.6 Protection of Property
- 1.7 Work on Private Property
- 1.8 Access and Construction Roads
- 1.9 Emergency Assistance

Section 2 – Forestry Policies and Procedures for Emergency Assistance (“Emergency”)

Section 3 – Supplementary Environmental, Safety and Health Terms and Conditions for Forestry Contracts (“Safety”)

- 3.1 General
- 3.2 General Safety Requirements
- 3.3 Contractor Safety Representative
- 3.4 Monthly Reporting
- 3.5 Event Reporting
- 3.6 Job Briefings
- 3.7 Personal Protective Equipment Requirements
- 3.8 Substations/Switchyards
- 3.9 Firearms, Alcohol and Drugs
- 3.10 Drug/Alcohol Testing
- 3.11 Language Requirements
- 3.12 Job Site Auditing
- 3.13 Emergency Planning
- 3.14 Traffic Control
- 3.15 Individuals Restricted from Access to AEP Sites
- 3.16 Housekeeping

Appendix A – AEP Forestry Contract Crew Audit Form

Appendix B – AEP Contractor Performance Report

Appendix C – AEP Supplied Job Briefing Form



AEP: America's Energy Partner®

SUPPLEMENTARY TERMS AND CONDITIONS FOR FORESTRY CONTRACTS

The following Supplementary Terms and Conditions for Forestry Contracts ("Supplementary Terms") shall supplement any of the American Electric Power Service Corporation ("Owner" or "AEP") General Terms and Conditions utilized in any Contract under which Contractor is authorized to perform Services. These Supplementary Terms shall not replace the safety or operational provisions in the applicable AEP General Terms and Conditions and are intended to support and reinforce other Contract documents.

All of the provisions of these Supplementary Terms shall also apply to Contractor's subcontractors. Contractor is responsible for ensuring that its subcontractors comply with these Supplementary Terms.

Contractor's and any of its subcontractors' failure to comply with these Supplementary Terms is cause for the Contract to be terminated and may prevent eligibility for the consideration of providing Services in the future (i.e., removal from AEP's qualified bidders list).



AEP: America's Energy Partner®

**SUPPLEMENTARY TERMS AND CONDITIONS
FOR FORESTRY CONTRACTS**

SECTION 1

GENERAL SUPPLEMENTARY TERMS AND CONDITIONS

1.1 Protection of Services

- 1.1.1 Contractor shall use care and diligence so that performed Services and all materials, installed equipment and tools are thoroughly protected from the weather, loss and any and all damage. Contractor shall furnish and pay for all such protection.
- 1.1.2 Contractor shall provide and pay for the removal of snow, ice and water from its storage or work areas.
- 1.1.3 Contractor shall be liable for any loss or damage caused by carelessness, negligence or any act or failure to act on the part of Contractor, its subcontractors or employees. Such loss or damage includes, but is not limited to, losses and damages to performed Services, materials, equipment to be installed, private property, construction equipment and other property belonging to Owner or other contractors.

1.2 Cleanup and Disposal of Non-Vegetative Debris

- 1.2.1 Contractor shall keep its work areas, storage areas, parking areas and other areas of operations clean and safe.
- 1.2.2 Contractor shall promptly remove trash and other non-vegetative debris from these areas and properly dispose of all trash and other debris resulting from Services.
- 1.2.3 Upon completion of Services, Contractor shall remove from the site and dispose of its surplus material, chemicals, equipment, tools and, unless otherwise directed in writing by Owner, all temporary structures per all applicable laws.
- 1.2.4 Contractor shall bear the cost of providing the cleanup and removal, including the cost of all labor, supplies, tools, construction equipment and transportation.

1.3 Material Storage and Handling

- 1.3.1 Owner may designate a material storage location that can be used by Contractor.
- 1.3.2 Unless provided by Owner, Contractor is responsible for the purchase and proper handling and storage of material used during the course of providing Services. Contractor shall abide by all applicable laws.
- 1.3.3 Contractor shall be responsible for the impact of all shortages resulting from missing or damaged material issued to Contractor but not applied. Contractor shall replace such material at its own expense. Substitutions will not be allowed unless approved by Owner in writing.
- 1.3.4 All unused material furnished by Owner or provided by Contractor, and paid for by Owner, shall be returned by Contractor to Owner's designated storerooms or storage points upon notification from Owner.



AEP: America's Energy Partner®

**SUPPLEMENTARY TERMS AND CONDITIONS
FOR FORESTRY CONTRACTS**

1.4 Electrical Clearances

- 1.4.1 Owner will arrange for all necessary clearances on energized equipment or circuits required to be taken out of service for the performance of Services. When an outage is required, Contractor shall notify Owner prior to scheduling such Services, allowing sufficient time for scheduling with system operators.

1.5 Permits and Easements

- 1.5.1 Owner will secure all right-of-way easements. Owner will also secure certain permits requiring Owner's signature (i.e., DOT permits, siting permits, building permits). Location specific and construction specific permits not already obtained by Owner are the responsibility of Contractor. Local vehicle registration/operation permits (i.e., frost law permit in Michigan) shall be the responsibility of Contractor.

1.6 Protection of Property

- 1.6.1 Contractor shall use all possible care not to damage any existing buildings, structures, pipes, sewers, conduits, manholes or other property, or to interfere therewith without the consent of Owner's authorized representative. Such structures and other objects shall be properly supported, braced and secured in place to prevent damage thereto. They shall not be relocated or reconstructed except as authorized by Owner. Contractor shall be responsible for all damage claims due to this negligence, including the cost of all material and labor required to replace or repair any property damaged.
- 1.6.2 Contractor shall immediately report the complete details of all damage claims to Owner. If Owner determines the claim is valid and is a result of Contractor's negligence, Owner will present the claim to Contractor for settlement. Contractor is to settle all valid claims within 30 days. Contractor is to provide Owner with documentation specific to a settlement process for any claim not settled within 30 days, or the claim will be handled by Owner and the damage amount billed to Contractor. All such damage claims settled by Contractor are to be reported to Owner in writing.
- 1.6.3 Contractor shall be responsible for notifying appropriate state one-call systems, as well as any other utility company not a member of the systems, prior to performing Services involving excavation, boring, stump grinding and/or other activities that may affect underground facilities.

1.7 Work on Private Property

- 1.7.1 Whenever any Services are to be completed on private property, Contractor shall attempt to notify owner and/or the tenants thereof and make arrangements with them so that Services will be completed with the least practicable inconvenience to them. Work on private property shall be done as expeditiously as possible and the premises restored immediately.



AEP: America's Energy Partner®

**SUPPLEMENTARY TERMS AND CONDITIONS
FOR FORESTRY CONTRACTS**

1.8 Access and Construction Roads

- 1.8.1 It is Contractor's responsibility to ensure that all property owners' roads traveled by Contractor are in the same condition as the roads were before Contractor elected to use the route. Should Contractor cause any damage to any such road, Contractor is obligated to restore the road to like or better condition than the road existed prior to Contractor's use. Such work shall be completed in a timely manner with proper written documentation of the damage/remedy supplied to property owner and Owner alike. Where Owner deems it necessary to maintain access roads on private property, crushed stone will be furnished or paid for by Owner, and Contractor shall provide labor and equipment to haul and place crushed stone as required. When approved in advanced writing by Owner, Owner shall pay for normal damage to fields or loss of crops resulting from necessary travel by Contractor.
- 1.8.2 Contractor shall keep fences in a sufficient state of repair to satisfactorily confine livestock and shall keep gates closed when not in immediate use. Before Services are considered to be completed, all temporary gates shall be removed and all fences cut or damaged shall be restored to original condition. Fencing damaged by Contractor shall be repaired at Contractor's expense.
- 1.8.3 When it is necessary to gain access to right-of-way over private roads, yards, pastures and cultivated fields, and it is impractical to restrict ingress and egress to the right-of-way, Contractor shall use the route agreed upon by the property owner, Contractor and Owner. Contractor shall notify the property owner prior to the use of these routes.

1.9 Emergency Assistance

- 1.9.1 In the event of extensive damage to Owners' facilities as a result of severe storms, flooding or other catastrophes, Owner may request assistance from Contractor in the repair of damages and restoration of service to customers. Under such circumstances, the "Forestry Policies and Procedures for Emergency Assistance" in Section 2 shall be followed.



AEP: America's Energy Partner®

**SUPPLEMENTARY TERMS AND CONDITIONS
FOR FORESTRY CONTRACTS**

SECTION 2

FORESTRY POLICIES AND PROCEDURES FOR EMERGENCY ASSISTANCE

In the case of emergencies, during which Contractor is called upon by Owner for storm assistance to restore service following catastrophic damage ("Emergency Assistance"), the following policies and procedures shall apply.

- 2.1 Contractor will provide Owner with emergency contacts, including 24-hour telephone numbers for requesting assistance.
- 2.2 Upon request for Emergency Assistance, Contractor shall provide Owner with a list of available personnel and their classification, labor rates, crew make up, equipment to be used and an estimated time of arrival.
- 2.3 Owner will specify the number of physical full time employees and any special equipment required and will notify Contractor as to where the crews are to be assigned and to whom they will report. Owner will check-in each crew upon arrival.
- 2.4 Contractor shall be responsible to make contact with the appropriate State officials concerning commercial driver's licenses and other transportation issues.
- 2.5 Contractor's crews shall arrive prepared to work and be equipped with PPE, PPI, tools, foul weather gear, lights and batteries to perform the assigned Services. Any crews arriving without the proper tools or equipment to perform the assigned Services may be released at Contractor's expense.
- 2.6 Owner shall determine the work hours for responding crews, including start time (at assigned crew headquarters) and duration. Contractor shall check in with Owner daily at the requested starting time for assignment of Services.
- 2.7 After working sixteen (16) consecutive hours up to a maximum of twenty-four (24) consecutive hours, Contractor's employees shall be released from providing Services for a minimum eight (8) hour rest period, which shall commence upon release by Owner.
- 2.8 Owner will allow a meal break every six (6) hours, or as near as practicable, while Contractor performs Emergency Assistance. Contractor's personnel will be off the clock for all meal breaks taken away from the work site.
- 2.9 Time sheets of Contractor employees shall be kept by Contractor. These time sheets shall be turned in daily to Owner for verification and approval.
- 2.10 Contractor shall be responsible for relaying all Owner communications to its crews.
- 2.11 Contractor shall be responsible for the safety of its crews. Contractor will provide safety statistical reporting of all hours worked on AEP property. This report format will be provided by the AEP Safety Coordinator.



AEP: America's Energy Partner

**SUPPLEMENTARY TERMS AND CONDITIONS
FOR FORESTRY CONTRACTS**

- 2.12 Owner shall reimburse Contractor for Emergency Assistance at the current contracted rate of the classification for each of Contractor employees utilized plus the applicable mark up percentage for straight and/or premium time. When responding from areas with existing AEP Contracts, Contractor's employees shall be paid at the rates incorporated in the Contract for the area from which they are responding. When Contractor responds from locations without existing contracted AEP rates, billing rates will be negotiated when the agreement to send crews is finalized.
- 2.13 Overtime pay for Emergency Assistance shall be paid based on provisions submitted by Contractor and approved in advance by Owner.
- 2.14 Owner will reimburse Contractor for lodging and meals (dollar amount for meals shall be predetermined by Owner) for the crew(s) requested. Owner may elect to supply meals and/or lodging to Contractor, in which case there will be no reimbursement. All other expenses: (i.e., personal phone calls, alcoholic beverages, tobacco, entertainment, etc.) will not be reimbursed by Owner.
- 2.15 Contractor's employees must register in person at the assigned lodging.
- 2.16 If Owner requests Contractor to provide an employee whose classification falls outside the standard Contractual labor billing rates, Owner shall provide the request in writing and will reimburse Contractor for said employee's labor, vehicle, lodging and meals.



AEP: America's Energy Partner®

**SUPPLEMENTARY TERMS AND CONDITIONS
FOR FORESTRY CONTRACTS**

SECTION 3

**SUPPLEMENTARY ENVIRONMENTAL, SAFETY AND HEALTH TERMS AND CONDITIONS FOR
FORESTRY CONTRACTS**

3.1 General

- 3.1.1 Contractor shall comply with AEP's Contractor Oversight program. Contractor's safety performance will be monitored and evaluated during performance of the Contract by Owners' representative.
- 3.1.2 Contractor shall adhere to all pertinent local, state and federal regulations and all rules and policies set forth in Contractor's own safety manual. Any shortcoming brought to the attention of Contractor by Owner shall be immediately corrected by Contractor. Repeated and/or severe safety violations, incidents or accidents may be cause for the Contract to be terminated, prevent eligibility for providing future Services and result in the potential removal from AEP's qualified bidders list.
- 3.1.3 Owner has the authority to immediately stop Contractor's Service performance indefinitely for practices, procedures and operations, which, in the opinion of Owner, constitute a safety concern. It is Contractor's responsibility to adequately satisfy Owner with any remediation necessary to provide a safe and healthful workplace.
- 3.1.4 Contractor shall have qualified and competent supervision on the job at all times to direct and observe the Work.
- 3.1.5 If Contractor in good faith believes that any rule or procedure set forth in these Supplementary Terms will put its employees or others at risk, Contractor shall immediately notify Owner and shall cooperate with Owner to develop a mutually acceptable alternative procedure.

3.2 General Safety Requirements

- 3.2.1 Owner, or Owner's representative, shall conduct random Forestry Contract crew safety audits and Contractor shall cooperate fully with Owner's representatives during this audit. The audit is defined in Appendix A.
- 3.2.2 Contractor shall promptly notify Owner if Contractor's or its subcontractors' Experience Modification Rate for workers compensation exceeds 1.0.
- 3.2.3 Contractor shall remain solely responsible for the proper and safe use of all tools, and for conducting safe work practices or procedures. Contractor shall provide information necessary for the job briefing identified in Section 3.6 below, Job Briefings.
- 3.2.4 Contractor shall provide Owner a list of all tools, practices or procedures it or its subcontractors will use in performing assigned Services with fabricated or modified tools ("Specialty Tooling"). Specialty Tooling includes all tooling fabricated, developed by or modified by Contractor. Contractor shall notify Owner of any Specialty Tooling it develops or modifies on site. Contractor shall also notify Owner, prior to use, if it intends to use standard tooling in ways other



AEP: America's Energy Partner®

SUPPLEMENTARY TERMS AND CONDITIONS FOR FORESTRY CONTRACTS

than those for which the tooling was designed. All such Specialty Tooling is subject to review by Owner. Specialty Tooling shall have design plans, engineered diagrams, etc. with a Professional Engineer's stamp of approval. Contractor shall also inspect Specialty Tooling prior to each use. At its sole discretion, Owner may prohibit or restrict the Contractor's use of Specialty Tooling on Owner's site.

3.2.5 Contractor shall immediately cleanup all spills from Contractors' equipment and vehicles.

3.3 Contractor Safety Representative

3.3.1 When Contractor has eleven (11) or more total employees on various projects of Owner or its affiliates, Contractor will have a safety professional visit the various work sites and/or work crews weekly to ensure Contractor's safety program is being enforced. All safety professionals shall have, at a minimum, the OSHA 30 hour training. A safety professional is defined as having the responsibilities of safety compliance, enforcement and/or training.

3.3.2 Qualifications of the aforementioned safety professional may be subject to Owner's review and approval.

3.3.3 Owner may require Contractor to assign additional safety professionals if Owner determines the scope of Services justifies additional safety oversight.

3.3.4 Owner may require Contractor to supply additional safety professionals if Owner has determined geographical Service locations justify additional safety oversight.

3.4 Monthly Reporting

3.4.1 Contractor shall report various safety related statistics, using the most current revision of the AEP supplied form, AEP Contractor Performance Report in Appendix B. Reported statistics will include those of Contractor's subcontractors and will represent Services performed on AEP projects/Contracts only.

3.4.2 The above requirements must be reported by the tenth (10th) day of the following month to the following e-mail address: distributionsafetycoordinator@aep.com. A copy of the AEP Contractor Performance Report will be supplied to Contractor for reporting this required data. The data will be used by Owner to evaluate Contractor's safety effectiveness and performance.

3.5 Event Reporting

3.5.1 When performing Services for AEP and a safety event occurs, Contractor shall notify Owner about the event immediately (verbal reporting is sufficient). Contractor shall also submit a written preliminary notification (no later than 8:00 a.m. the following working day of the event) to the Forestry Supervisor, Region Support Manager and/or designee, Forestry Operations Manager, and shall also e-mail a copy to distributionsafetycoordinator@aep.com, listing any and all safety events occurring during the performance of Services. A separate report is required for each event. Reported events include near miss events, first aid and minor events, OSHA recordable injuries,



AEP: America's Energy Partner®

SUPPLEMENTARY TERMS AND CONDITIONS FOR FORESTRY CONTRACTS

flash/outage events, vehicle accidents, spills/release, underground utility strikes and OSHA/EPA citations/visits. The written report should include sufficient detail to identify the nature of occurrence, the extent of injury (if any) and contact name and number of the person leading the investigation. Within seven (7) business days, Contractor shall submit an in depth report to the e-mail address listed above, along with a copy to the Forestry Supervisor, Region Support Manager and/or designee and Forestry Operations Manager. This report must include the time and date of event, location of event, name of injured employee, the injured employee's on the job experience, description of event, factors that may have caused or contributed to the event, corrective actions taken and/or planned and the person(s) responsible for corrective actions.

3.6 Job Briefings

3.6.1 Prior to the commencement of Services in any location and before any changes in procedures or activities are made, Contractor shall perform a Job Briefing in written report/form to identify all potential work site risks. Each member of the crew must sign his/her name to this form in order to affirm their presence at the time the information was presented during the Job Briefing. The report shall include, at a minimum: 1) applicable hazards present during the course of performing the specific assignment 2) Service procedures involved 3) special precautions 4) energy source controls and 5) personal protective equipment requirements. Should Contractor not have its own Job Briefing requirements/forms, then Contractor shall use the AEP Supplied Job Briefing Form in Appendix C.

3.6.2 Contractor shall make its Job Briefing Forms available to Owner upon request.

3.7 Personal Protective Equipment Requirements

3.7.1 Contractor is responsible for requiring the use of appropriate personal protective equipment ("PPE") in all operations where there is an exposure to hazardous conditions.

3.7.2 Owner requires Contractor and Subcontractor employees to wear the following PPE, at a minimum, while on/in any construction site and/or work area:

- Safety glasses or safety prescription glasses with side shields
- Hardhat
- Work gloves that provide protection for the type of work
- Approved hearing protection devices when required
- Shoes with a defined heel (employees that climb structures)

3.7.3 Open-toed, open-heeled, athletic footwear and tennis shoes are strictly prohibited. Additional foot protection and/or PPE may be required based on Contractor's PPE assessment or special environmental conditions.



**SUPPLEMENTARY TERMS AND CONDITIONS
FOR FORESTRY CONTRACTS**

3.8 Substations/Switchyards

- 3.8.1 OSHA requires personnel working within an electrical station be qualified to recognize equipment and hazards unless escorted by a qualified person. Employees not OSHA station qualified shall be under direct supervision of qualified personnel.
- 3.8.2 Gates to station fences shall remain closed and locked when they are not under the direct observation of an attendant.

3.9 Firearms, Alcohol and Drugs

- 3.9.1 Firearms, alcohol, illegal drugs or drugs taken for non-medicinal purposes are prohibited on all Owner Sites.
- 3.9.2 Contractor shall be responsible for all Contractor and Subcontractor(s) employees who are under the care of a physician and are taking prescribed medicine, which may alter the employee's physical or mental ability. Contractor shall determine the necessity to modify the employee's job assignment while undergoing treatment.
- 3.9.3 If firearms or suspected illegal drugs are discovered on any AEP property or Work Site/area, the following guidelines should be followed by whoever discovers the firearms or suspected illegal drugs:
- First, if possible without putting themselves or others in harms way, attempt to secure the location and ensure that others cannot come in contact with the firearms or suspected illegal drugs. Do not handle or move firearms or suspected illegal drugs from their discovered location.
 - Second, immediately contact the Owner's Contract Supervisor or Distribution Line Representative and together make a decision whether or not the situation requires a call to the local law enforcement authorities. Immediately call the local law enforcement authorities and report the discovered item(s) if (a) neither the Owner's Contract Supervisor nor the Distribution Line Representative is available; (b) there is a threat of harm to any person; or (c) there is a risk of improper removal or disposal of the firearms or illegal drugs.
 - Third, call local Owner's security personnel or call the Owner's general Security hotline at 1-866-747-5845.
 - Fourth, for incidents involving Contractor personnel, Contractors shall submit reports according to Section 3.5, Event Reporting.

3.10 Drug/Alcohol Testing

- 3.10.1 All Contractor and subcontractor employees performing Services under this Contract must complete and pass a pre-employment drug/alcohol screening. Screening substances and their associated cut-off limits are the same as listed in the applicable AEP General Terms and Conditions.



AEP: America's Energy Partner®

**SUPPLEMENTARY TERMS AND CONDITIONS
 FOR FORESTRY CONTRACTS**

3.10.2 Post event drug and alcohol testing shall be performed, at Owner's discretion, on all Contractor and subcontractor employees involved in any safety related event. Testing results shall be shared with Owner upon request.

3.10.3 Contractor shall incur all costs associated with the required drug and alcohol testing as required in these Supplementary Terms.

3.11 Language Requirements

3.11.1 Contractor's and its subcontractor's employees shall be capable of communicating in English. At least one copy of all documents and reports, including Job Briefings, shall be prepared in English.

3.12 Job Site Auditing

3.12.1 Contractor representatives, at a minimum, shall perform and document a Job Site Observation based on the following table:

Representative Level	Frequency
Senior Management	1/Quarter
Operational Management	1/Month
General Foreman	2/Week
Safety Professional	2/Week

3.12.2 If Contractor does not meet the requirements of Safety Section 3.3.1 [less than eleven (11) employees], then the lowest representative level of the table in 3.12.1 above (safety professional) shall be followed by a company representative.

3.12.3 Contractor shall make documentation of such job site observations available to Owner upon request.

3.13 Emergency Planning

3.13.1 All job sites must have an Emergency Action Plan that has been communicated and documented to all employees. The Job Site Emergency Action Plan shall be documented on each job briefing conducted. This plan shall include, at a minimum:

- Emergency contacts
- Location and name of local emergency services
- Location of closest communication method
- Location of closest medical facility
- Procedure to follow in the event of an emergency

3.14 Traffic Control

3.14.1 All Services performed on or adjacent to existing public road or rights-of-way and/or job site roadways shall be performed in conformance to the requirements of the Manual on Uniform Traffic Control Devices (current revision), state and local jurisdiction.



*AEP: America's Energy Partner**

SUPPLEMENTARY TERMS AND CONDITIONS FOR FORESTRY CONTRACTS

3.15 Individuals Restricted from Access to AEP Sites

- 3.15.1 Owner may deny access to its facilities by any person who fails to comply with the safety provisions set forth in the applicable AEP General Terms and Conditions or these Supplementary Terms or any person who, in Owner's sole judgment, otherwise demonstrates a lack of safety performance. Examples of a lack of safety performance include, but are not limited to, the following:
- Unsafe job performance
 - Failure to pass drug/alcohol test
 - Displaying incompetence in performing their job
 - Employees that are determined to be unfit for project employment
 - Playing of pranks, horseplay or practical jokes
 - Failure to report injuries and/or accidents
 - Fighting or acts of aggression
 - Theft or vandalism
 - Convicted Sexual Offenders
- 3.15.2 Prior to the commencement of Services and during the term of the Contract, Contractor shall provide Owner with a list of all individuals, including Contractor and subcontractor employees, whom Contractor intends to perform Services at Owner's sites. The list shall identify the individuals by their name and the last three digits of their Social Security number.
- 3.15.3 Owner may, at its sole discretion, deny access to any individual who has been previously removed from a project by Owner or any of its affiliates for safety reasons.
- 3.15.4 Contractor may request a restricted Contractor employee to be cleared for the performance of Services. A letter addressing the original safety violation(s) or reason(s) for removal and any documentation supporting the request shall be sent to Owner for approval. Contractor's employee shall not perform Services at any of Owner's sites until approved by Owner. Said approval may be granted or withheld at Owner's sole discretion.

3.16 Housekeeping

- 3.16.1 Contractor shall ensure that debris, materials, scrap, trash, etc. is contained and removed daily in order to prevent it from interfering with the safety of any employee and/or general public.



AEP: America's Energy Partner®

**SUPPLEMENTARY TERMS AND CONDITIONS
FOR FORESTRY CONTRACTS**

**APPENDIX A
AEP FORESTRY CONTRACT CREW AUDIT FORM**



**SUPPLEMENTARY TERMS AND CONDITIONS
FOR FORESTRY CONTRACTS**

**APPENDIX B
AEP CONTRACTOR PERFORMANCE REPORT**



*AEP: America's Energy Partner**

**SUPPLEMENTARY TERMS AND CONDITIONS
FOR FORESTRY CONTRACTS**

**APPENDIX C
AEP SUPPLIED JOB BRIEFING FORM
(ONLY FOR CONTRACTORS THAT DO NOT HAVE THEIR OWN DOCUMENT)**



Security & Aviation Aircraft Deconfliction Guidelines

AEP Aircraft Deconfliction Policy and Procedures

Version 1.0

AEP Security & Aviation

07.15.13

Security & Aviation Aircraft Deconfliction Guidelines

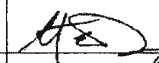
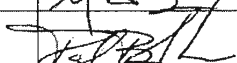
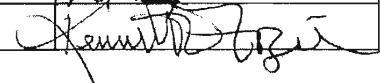
Revision History

Date	Revision Number	Description/Section Changed	Author(s)
4.15.13	1.0	Initial Policy	S. Partlow, S. Queeno

Review History

Date of Review	Revision Number	Subject Matter Experts Involved
06/5/13	1.0	P.B. Johnson, E.G. Schnell, D.E. Guill, D.K. Kunkel, C.D. Moses, D.L. Milford, S Partlow, S. Queeno

Approval

ACTION	NAME(S)	TITLE	
Approved by:	Stanley E. Partlow	Managing Director Security and Aviation	 7/26/13
Approved by:	Paul B. Johnson	Managing Director Transmission Operations	
Approved by:	Kenneth R. Frazier	VP Safety & Health	



Security & Aviation Aircraft Deconfliction Guidelines

Title:	AEP Aircraft Deconfliction Guidelines	Revision Date:	4.15.13
Owners:	Stanley Partlow, Managing Director Security, Aviation and Procurement	Sponsoring Area(s):	Security & Aviation
Policy Statement:			

No aspect of operations is more important than the health and safety of people. These guidelines are written with this single point in mind and adherence to these guidelines shows that commitment to safety.

AEP business units that utilize fixed wing or rotor aircrafts, referred to throughout this document as aircraft to perform aerial surveillance functions on behalf of AEP must follow the attached guidelines to ensure the safety and security of our personnel, facilities, and the general public.

A periodic review of this document may be conducted to ensure accurate information. This document may be updated as conditions and requirements change.

Detail:

TABLE OF CONTENTS

1.1 Purpose.....4

1.2 Scope & Applicability.....4

1.3 Deconfliction.....4

1.4 Business Unit Responsibilities5

1.5 Aircraft Companies.....5

1.6 Information for Flight Tracking.....5

1.7 Security Operations Center5

1.8 Communication.....6

1.9 Storm Mode.....6

2.0 Audit.....6

Contact Numbers.....6



Security & Aviation Aircraft Deconfliction Guidelines

1.1 PURPOSE

The objective of these guidelines is to provide AEP business units, contracted aircraft companies and key stakeholders with information related to aircraft safety while performing work for AEP. These guidelines provide direction to business units, aircraft companies, the Security Operations Center (SOC) and the Managing Director of Security and Aviation. This document will assist in the deconfliction of Aircrafts that may be contracted by AEP and flying in the same area on the same day.

1.2 SCOPE & APPLICABILITY

This document applies to any aircraft such as helicopters or fixed wing used by AEP for any purpose. This document applies to the safety of the aircraft crew, AEP personnel and the general public as it relates to tracking of flights in the same state quadrant. Transmission who oversees the nation's largest electricity transmission system has a vested interest in knowing the exact lines flown and has included a TOPs Aerial Notification Procedure Matrix within this guideline that **all business** units will use to communicate flights.

1.3 DECONFLICTION

Many AEP Business units contract with various aircraft companies to perform services around AEP assets. These business units and aircrafts have no way of knowing each other's flight path on a particular day. Also, AEP facilities are most often not aware of a aircraft that maybe performing aerial patrols over their facility. Deconfliction is designed to ensure that two or more aircrafts are not in the same area at the same time, unless they are aware of each other's presence. In order to achieve this, the Security Operations Center (SOC) will serve as the central point to ensure that all flights are tracked for safety purposes. The SOC will ensure that the aircraft companies are aware of each other's presence and follow up with each to ensure contact has been made.

A safety issue arises when two or more aircrafts are flying in the same area at the same time without knowledge of each other's presence. The SOC is in a position to track such occurrences and notify each company and provide contact information to both and require they communicate with each other while flying for AEP. The SOC will alert aircraft companies when two or more aircrafts are flying in the same state, on the same date, in the same quadrant. The SOC does not need the exact location of the flight plan but does require the state quadrant the aircraft will be over- flying. In addition the SOC requires information related to any AEP facilities that will be overflown.

State Quadrant Example





1.4 AEP BUSINESS UNIT RESPONSIBILITIES

It will be the responsibility of the AEP business unit contracting with the aircraft companies to advise the vendors of these guidelines. Business units contracting for this service must follow this policy. Appendix I shows the Transmission Aerial Notification Procedure matrix to be followed by all AEP business units for notification purposes.

1.5 AIRCRAFT COMPANIES

Aircraft companies contracted by AEP are required to follow these guidelines. The aircraft company will be notified by the SOC of any other AEP contracted aircraft operating in the same state quadrant during the same time frame. The SOC will provide all aircraft companies with each other's 24x7 phone number and advise all parties to contact each other so they can provide specific flight information. Daily the SOC will review any open flights in the same quadrant and contact each aircraft company to remind them that there is another aircraft operating in the same region.

1.6 INFORMATION REQUIRED FOR FLIGHT TRACKING

The SOC will require the following information to effectively track and deconflict all aircrafts flying for AEP.

- Name of Person providing flight information
- Name and telephone number of AEP Contact and Business Unit
- Name of Aircraft Company and 24x7 Phone number
- Aircraft Color and Tail Number (provide photo if available)
- Date and Time flight will occur (If scheduled for a week provide that information)
- State in which the flight occur
- Quadrant of the State where the flight will occur (NE, SE, NW, SW)
- Name of any AEP facility that will be overflown
- Flight Plan if involving Transmission or Generation assets

Any changes in dates, times or flight location must be communicated to the SOC and TDC either by phone call or using the Aerial Notification procedure matrix.

1.7 SECURITY OPERATIONS CENTER

The Security Operations Center is the alarm and communication center for AEP Physical Security. The SOC focuses on safety, compliance and reliability. The SOC is in a unique position to track and evaluate each flight to determine if a potential conflict exists with multiple aircrafts contracted by different business units flying in the same state quadrant.

The SOC will receive notifications from the Aircraft Company or AEP Business units regarding a flight taking place. The SOC operator on duty will launch an Aircraft Deconfliction Flight Tracking incident in the Situator™ program and obtain the specific information regarding the flight. If there is another flight already scheduled for the same day and same state quadrant, the SOC will notify the aircraft companies flying in the same quadrant and provide contact information to both. It will be the responsibility of the aircraft companies to communicate with each other and provide specific details of their flight location.

Daily, the SOC will review all flights that are scheduled for that day. At this time the TDC can also override a request if there is a system reliability concern. Aircraft vendors who are scheduled to operate in the same state quadrant will receive a call from the SOC reminding them that another aircraft company is scheduled to fly in the same area on that day.



Security & Aviation Aircraft Deconfliction Guidelines

The SOC will provide daily the date, time, state quadrant, and aircraft description to the following business units via email:

Transmission
Distribution
Generation Dispatch
Physical Security

If a flight plan includes the over flight of a Generation facility the SOC will provide pertinent details to the Plant Manager or designee.

The SOC will document all calls and information received in the NICE Situater program. The TDC will log all related activities on the Dispatcher Operating Log (DOL).

1.8 COMMUNICATION

Communication is the key to the success of this program and safety of all involved. Aircraft vendors or an AEP representative flying with the aircraft vendor will contact the SOC and TDC using emailing depending on their geographic location. For a detailed list see (Appendix 1)

East - aerial_patrol_notification_t_east@aep.com

West - aerial_patrol_notification_t_west@aep.com

When email is used to communicate the flight information, the SOC will contact the company via telephone **if a conflict is present based on the information received**

1.9 STORM MODE

When a storm mode is declared by an operating company or an unscheduled forced outage assessment flight is needed, it will be the responsibility of the AEP Business unit contracting aircraft companies to **call both the SOC and TDC** to report flight information and not use the email notification. Usually during storms there is an increased amount of aircrafts used by AEP surveying the storm area. The possibility of an aircraft flying in the same general area is greater than during normal operating conditions, it will be important that deconfliction is accomplished rapidly by the SOC. The SOC will also communicate the flight information they receive during storm mode to the appropriate e-mail group listed in section 1.8.

2.0 AUDIT

The Managing Director of Security and Aviation will audit this program and ensure all business units are following these guidelines. Periodically the Managing Director of Security and Aviation will require the SOC to provide reports of n flights that are logged by the SOC. The Managing Director will contact business units and ask for information on flights contracted by AEP, and both reports will be compared. If a discrepancy is found that there is an aircraft flight and no call was received by the SOC, the Managing Director will provide that information to the business unit.

CONTACT NUMBERS

Security Operations Center – 1-866-747-5845
Security Operations Center Manager – 614-716-3347
Managing Director Security and Aviation – 614-716-3020
Transmission Dispatch -- (TDC desk phone numbers to be provided only to AEP Representatives. These are internal numbers and should not be shared with the aircraft vendors.)



Security & Aviation Aircraft Deconfliction Guidelines

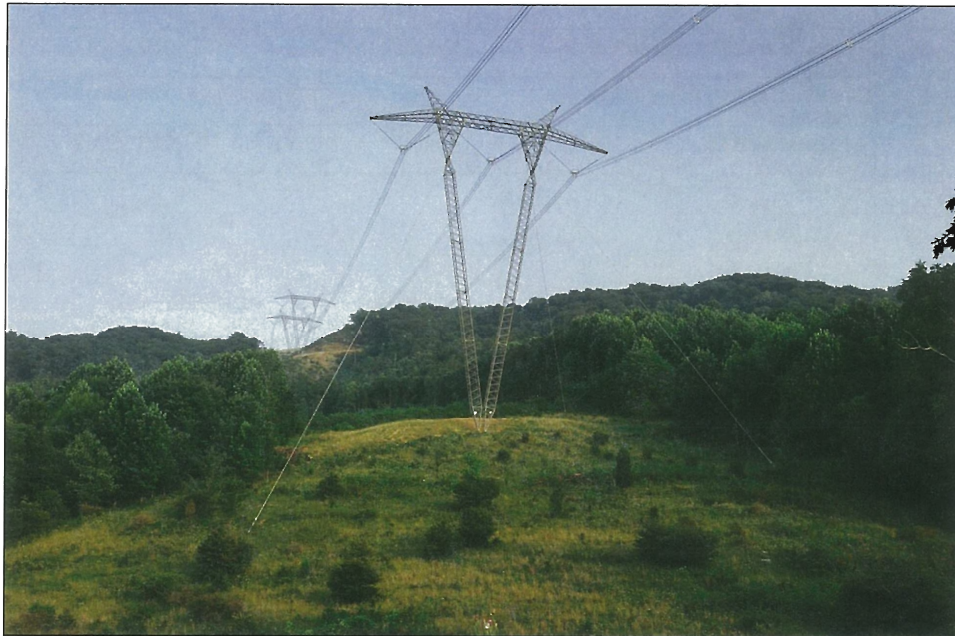
Appendix I
Proposed Procedures – Effective July xx, 2013

Group	Type of Activity	East TDCs CO, RO	West TDCs CC, SH, TU	Comments Before Day of	Comments Day of
Forestry	Aerial Inspections Aerial Spraying Right-of-way clearing	Use Email mail list <u>Aerial Patrol Notification T East</u> consisting of SOC, TDC, T Line, TLE, D, G, and Forestry reps	Use Email mail list <u>Aerial Patrol Notification T West</u> consisting of SOC, TDC, T Line, TLE, D, G, and Forestry reps	Informational Email consisting of aircraft info (photo if available), contact names and numbers, scope of work, dates, and assets involved	- System Conflict notification by TDC - Phone call to the TDC/Email Notification if there is deviation from original request - Interconnect notification by TDC
TLE	LiDar Inspections TGIS mapping	Use Email mail list <u>Aerial Patrol Notification T East</u> consisting of SOC, TDC, T Line, TLE, D, G, and Forestry reps	Use Email mail list <u>Aerial Patrol Notification T West</u> consisting of SOC, TDC, T Line, TLE, D, G, and Forestry reps	Informational Email consisting of aircraft info (photo if available), contact names and numbers, scope of work, dates, and assets involved	SAME AS ABOVE
TFS/T Line East	Live line work Storm recovery and assessments Aerial patrols	Use Email mail list <u>Aerial Patrol Notification T East</u> consisting of SOC, TDC, T Line, TLE, D, G, and Forestry reps	Use Email mail list <u>Aerial Patrol Notification T West</u> consisting of SOC, TDC, T Line, TLE, D, G, and Forestry reps	Informational Email consisting of aircraft info (photo if available), contact names and numbers, scope of work, dates, and assets involved	SAME AS ABOVE
TFS/T Line West	Live line work Storm recovery and assessments Aerial patrols	Use Email mail list <u>Aerial Patrol Notification T East</u> consisting of SOC, TDC, T Line, TLE, D, G, and Forestry reps	Use Email mail list <u>Aerial Patrol Notification T West</u> consisting of SOC, TDC, T Line, TLE, D, G, and Forestry reps	Informational Email consisting of aircraft info (photo if available), contact names and numbers, scope of work, dates, and assets involved	SAME AS ABOVE
Corporate Communications Distribution Generation	Any activity involving aerial surveillance functions	Use Email mail list <u>Aerial Patrol Notification T East</u> consisting of SOC, TDC, T Line, TLE, D, G, and Forestry reps	Use Email mail list <u>Aerial Patrol Notification T West</u> consisting of SOC, TDC, T Line, TLE, D, G, and Forestry reps	Informational Email consisting of aircraft info (photo if available), contact names and numbers, scope of work, dates, and assets involved	SAME AS ABOVE

Notes – (1) Any activities not listed above involving a aircraft performing any AEP asset observation or reconnaissance requires notification to the TDC and SOC


Transmission Vegetation Management Program

Effective July 31, 2013



Caution: Printed copies of this document are uncontrolled and may be obsolete. Check for the latest revision before using. Disclaimer: This document has been prepared by and is the property of American Electric Power Company, Inc.; is intended for AEP use only; is not to be used for any purpose detrimental to AEP's interest; is not to be furnished to, copied by, or reproduced by parties not affiliated with the AEP system without the express written consent of AEP; and is to be returned upon request.

Transmission Vegetation Management Program

	Responsible Forester: K. B. Patton	Copyright 2012 American Electric Power	Rev. 12	TVMD-001
				Page 1 of 35

Review Cycle

Version	Description	Review Cycle	Retention Period	Review Date
1	Reviewed with Changes to Ver. 0.	Annual	3 Yrs	01/16/2006
2	Reviewed with Changes to Ver. 1 and 2.	Annual	3 Yrs	03/12/2007
5	Reviewed with Changes to Ver. 3, 4, and 5.	Annual	3 Yrs	05/06/2008
8	Reviewed with Changes to Ver. 6.	Annual	5 Yrs	05/26/2009
9	Reviewed with Changes to Ver. 8.	Annual	5 Yrs	07/27/2010
10	Reviewed with Changes to Ver. 9.	Annual	5 Yrs	07/21/2011
11	Reviewed with Changes to Ver. 10.	Annual	5 Yrs	07/12/2012
12	Reviewed with Changes to Ver. 11.	Annual	5 Yrs	07/15/2012

Revision History


Version	Description	Prepared By	Reviewed By	Approved By	Effective Date
1	Added Appendixes A and B.	H.R. Jones, Principal Engineer	-	J. E. Schechter, Mgr., Trans. Line Asset Engineering	01/16/2006
2	Added Appendix C.	H.R. Jones, Principal Engineer	-	J. E. Schechter, Mgr., Trans. Line Asset Engineering	10/02/2006
3	Added Revision History.	H.R. Jones, Principal Engineer	-	J. E. Schechter, Mgr., Trans. Line Asset Engineering	03/12/2007
3	Revised Appendix C from Version 2. Clarified video text associated with aerial patrols, page 8.	H.R. Jones, Principal Engineer	-	J. E. Schechter, Mgr., Trans. Line Asset Engineering	03/22/2007
4	Revised Maintenance Clearances in Table I, page 11. Removed Appendix A from Revision 0 and inserted a new Appendix A. Removed Appendix B from Revision 0 and renamed Appendix C from Revision 0 to Appendix B.	H.R. Jones, Principal Engineer	-	J. E. Schechter, Mgr., Trans. Line Asset Engineering	11/09/2007
5	Revised Maintenance Clearances text page 10. Revised Appendix B.	H.R. Jones, Principal Engineer	-	J. E. Schechter, Mgr., Trans. Line Asset Engineering	05/06/2008

Version	Description	Prepared By	Reviewed By	Approved By	Effective Date
6	Added third level of review/approval. Added Internal Mailing list. Added Standard mapped to TVMP. Revised Contents and page numbers. Revised Maintenance Clearances, pages 13 and 14. Revised Imminent Threat, pages 10 and 11. Revised Appendix A. Added new Appendix C. Added new Appendix D. Added hyperlinks.	S .J. Reaves, Forestry Program Coordinator I	J. E. Schechter, Mgr., Trans. Line Asset Engineering	D. R. Boezio, Dir., Trans. Asset Engineering	06/15/2009
8	Revised Version History. Revised Personnel Qualifications, Appendix D. Included References on Contents Page. Revised Subject Matter Experts (SMEs).	S .J. Reaves, Forestry Program Coordinator I	J. E. Schechter, Mgr., Trans. Line Asset Engineering	D. R. Boezio, Dir., Transmission Asset Engineering	07/31/2009
9	Revised Reviewer and Approval List. Revised TVMP Internal Mailing List. Changed Landowner and Community Relations section to Land Owner Relationships and Environmental Sustainability. Revised Subject Matter Experts (SMEs). Revised Personnel Directly Involved.	D.K. Killingsworth, Engineer I	J. E. Momme, Dir., Trans. Line Projects Engineering	D. J. Recker, Managing Dir., Trans. Projects Engineering	07/30/2010
10	Reformatted Document to match Transmission Forum Model TVMP.	D.K. Killingsworth, Engineer I	J. E. Momme, Dir. Trans. Line Projects Engineering	D. J. Recker, Managing Dir. Trans. Projects Engineering	7/30/2011

Version	Description	Prepared By	Reviewed By	Approved By	Effective Date
11	Revised Reviewer and Approval List. Revised TVMP Internal Mailing List. Changed Land Owner Relationships and Environmental Sustainability to Land Owner Relationships and revised. Revised Subject Matter Experts (SMEs). Revised Personnel Directly Involved. Removed Appendix C. Revised Personnel Qualifications. Revised New Construction Clearing. Added Document Team.	K. B. Patton, Utility Forester II	J. E. Momme, Dir., Trans. Line Projects Engineering	D. J. Recker, Managing Dir., Trans. Projects Engineering	7/31/2012
12	Revised Document Team. Revised Subject Matter Experts (SMEs). Revised Appendix A Imminent Threat Communication and Procedures. Revised Appendix B Imminent Threat Communication. Revised Appendix C TVMP Internal Mailing List. Revised Forestry Patrol Procedures. Revised Imminent Threat Report Form.	K. B. Patton, System Forestry Coordinator	J. E. Momme, Dir., Trans. Line Projects Engineering	D. J. Recker, Managing Dir., Trans. Projects Engineering	7/30/2013

Signatures


Prepared By



Kevin B. Patton
System Forestry Coordinator, Forestry Operations

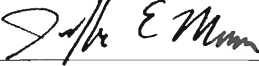
7/15/2013
Date

Approved By



Walter A. Sherry, Jr.
Manager, Forestry Operations

15 Jul 13
Date




Jeffrey E. Momme, P.E.
Director, Transmission Line Engineering

7/19/13
Date




Daniel J. Recker, P.E.
Managing Director, Transmission Projects Engineering

7/19/13
Date



Scott Moore, P.E.
Vice President, Transmission Engineering & Project Services

7/25/13
Date



Scott N. Smith
Senior Vice President, Transmission Grid Development & Portfolio Services

7/25/13
Date

Document Team

Barrett A. Thomas, Engineer I, Transmission Line Engineering
Benjamin Bradburn, Utility Forester II, Transmission Forestry
Eric K. Engdahl, P.E., Staff Engineer, Transmission Line Standards
H. Lynn Grayson, Consultant
Jacqueline M. Rich, Engineer III, Transmission Line Engineering
James G. Cruser, Supervisor, Region Forestry, Transmission Forestry
Jeffery E. Momme, P.E., Director, Transmission Line Engineering
Jon K. Radebaugh, Senior Utility Forester, Transmission Forestry
Kevin Killingsworth, P.E., Senior Engineer, Transmission Line Engineering
Kevin B. Patton, Forestry System Coordinator, Forestry Operations
Lynn E. Hayward, Lead Engineer, Transmission Line Engineering
Mark Boucher, Utility Forester II, Transmission Forestry
Richard L. Karber, Transmission System Forestry Lead Coordinator, Transmission Forestry
Rick Mowbray, Supervisor, Region Forestry, Transmission Forestry
Robert Whitaker, Engineer I, Transmission Line Engineering
Walter A. Sherry Jr., Manager, System Forestry Operations

Table of Contents

Review Cycle	2
I. Referenced Specifications	10
II. The Transmission Vegetation Management Program (TVMP).....	11
A. Introduction and Purpose	11
B. Vegetation Management Objective.....	11
1. Philosophy of the AEP Vegetation Management Program.....	12
2. Landowner Relationships.....	12
3. Property Owner Right of Maintenance	13
C. Inspections	13
1. Vegetation Inspections & Patrols.....	13
2. Forestry Patrol Procedures	13
a. Patrol of the AEP Transmission System	13
b. Patrol Schedule	15
3. Exceptions	15
4. Action Thresholds.....	15
5. Conditions and Actions.....	16
a. A1 Condition.....	16
b. P1 Condition	16
c. P2 Condition	16
d. P3 Condition	16
6. High Risk Vegetation Conditions	16
a. Tree Species.....	16
b. River/Creek Crossings	16
c. Wetlands	17
d. Upslope Timber	17
e. Span Length and Blow Outs	17
f. Fence Rows.....	17
7. Imminent Threats	17
D. Clearances	17
1. Right-of-Way Clearance Guidelines.....	17
2. Restrictions	18
3. Restriction Mitigation	19
4. Minimum Approach.....	19
E. Personnel Qualifications	21
III. Annual Plan	22
A. Annual Work Plan	22
1. Annual Plan Development.....	22
2. Start and End Dates.....	22
B. Maintenance Schedule	22
C. Unscheduled Work.....	22
D. Specifications.....	22
E. Right-of-Way Maintenance Methods	23
1. Annual Work Planning/Notification	23
2. Tree Removal.....	23
3. Tree Pruning.....	23

4. Clearing.....	24
5. Herbicide Application.....	24
6. Debris Cleanup.....	24
7. Tree Growth Regulators.....	24
F. New Construction Clearing.....	24
G. Inspections (Work Quality).....	25
IV. Reporting.....	26
A. Recording Outages Caused by Vegetation.....	26
1. Outage information.....	26
2. Reports.....	26
B. Reporting Outages Caused by Vegetation.....	26
Appendix A: Imminent Threat Communication and Procedures.....	27
A. AEP Forestry Personnel.....	27
B. AEP non-Forestry Personnel.....	28
1. Option 1: Notification to AEP Forestry Personnel (Preferred).....	28
2. Option 2: Notification to Transmission Dispatch Center.....	28
3. Option 3: Notification to Distribution Dispatch Center.....	28
4. Option 4: Notification to AEP Customer Solution Center.....	28
C. Non-AEP Personnel.....	28
Appendix B: Imminent Threat Communication.....	30
Appendix C: Subject Matter Experts.....	31
Appendix D: FAC-003-1 Requirements Addressed.....	32
Appendix E: TVMP Internal Mailing List.....	33

I. Referenced Specifications

Title	Date	Version	Pages
<i>AEP Forestry Goals, Procedures & Guidelines for Distribution and Transmission Line Clearance Operations</i>	2009		
American Electric Power (AEP). <i>Transmission Right of Way Clearing and Maintenance: A Balanced Approach to Vegetation Management</i> . American Electric Power, Columbus, OH 43215.	2008		
American National Standard Institute. <i>for Tree Care Operations - Tree, Shrub, and Other Woody Plant Management - Standard Practices (Pruning)</i> . Tree Care Industry Association, Inc. Londonderry, NH 03053.	2008	A300(1)-2008	1-13
American National Standard Institute. <i>for Tree Care Operations - Tree, Shrub, and Other Woody Plant Management - Standard Practices Part 7 – Integrated Vegetation Management a. Electric Utility Rights-of-way</i> . Tree Care Industry Association, Inc. Londonderry, NH 03053.	2012	A300(7)-2012	1-8
American National Standard Institute. <i>Arboricultural Operations - Pruning, Trimming, Repairing, Maintaining, and Removing Trees, and Cutting Brush - Safety Requirements</i> . International Society of Arboriculture (ISA). Champaign, IL 61826.	2012	Z133.1-2012	1-84
IEEE 516-2003. Institute of Electrical and Electronics Engineers, Inc. <i>IEEE Guide for Maintenance Methods on Energized Power Lines</i> . Institute of Electrical and Electronics Engineers, Inc. New York, NY 10016-5997.	2003		1-119
<i>AEP Guideline Accounting for Maximum Conductor and Sag Blowout for Vegetation Management</i>	2006		
<i>AEP Transmission Forestry Aerial Patrol Procedures for NERC-Reportable Circuits</i>	2011		
<i>AEP Risk Assessment & Procedures</i>	2011		

II. The Transmission Vegetation Management Program (TVMP)

A. Introduction and Purpose

The American Electric Power (AEP) Transmission Vegetation Management Program (TVMP) has been developed and implemented to ensure compliance with the North American Electric Reliability Corporation (NERC) reliability standard FAC-003-1.

- This program is intended to improve the reliability of the electric transmission system by preventing outages from vegetation located on transmission rights-of-way (ROW) and minimizing outages from vegetation located adjacent to ROW.
- Maintaining clearances between transmission lines and vegetation on and along transmission ROW.
- Report vegetation-related outages of the transmission systems to the appropriate Regional Entity (RE) and NERC.

This program applies to AEP's transmission system operated as 200 kV and above (>200kV) and other lower-voltage transmission circuits that have been designated as critical by the Reliability Coordinator (PJM, SPP RTO, ERCOT). For this document, transmission circuits meeting that criterion are referred to as NERC-reportable. NERC-reportable circuits are those transmission circuits that are within the scope of FAC-003-1.

AEP's Transmission Forestry Operations group manages and executes the program for vegetation along approximately 8,600 miles of NERC-reportable transmission rights-of-way in portions of eleven states. This is accomplished through the implementation and oversight of a comprehensive, systematic, vegetation management program.

B. Vegetation Management Objective

The TVMP is an integral part of providing for the safe, reliable operation of the AEP transmission system. The key measure of success is zero reportable vegetation-related outages on NERC-reportable circuits.

For NERC-reportable circuits, AEP's intent is to clear the right-of-way to the maximum appropriate width, removing all woody-stemmed vegetation within the right-of-way¹. Danger trees (those trees considered a hazard to AEP's facilities) that are outside the right-of-way will be addressed with the landowner and removed or made safe.

AEP conducts inspections, aerial and as needed ground inspections, and develops annual vegetation management work plans to ensure the program objective is achieved in the most efficient, environmentally sound, and economical manner practical.

AEP strives to manage its rights-of-way in accordance with its Environmental, Safety and Health (ES&H) Philosophy of, "No aspect of operations is more important than the health and safety of people. Our customer's needs are met in harmony with environmental protection."

¹ Upon completion of vegetation maintenance.

	Transmission Vegetation Management Program	Rev. 12	TVMD-001
			Page 11 of 35

Other considerations include:

- Minimizing adverse environmental impacts.
- Complying with laws and regulations.
- Achieving cost efficiency.
- Maintaining a positive relationship with landowners and the public.

1. Philosophy of the AEP Vegetation Management Program

Vegetation on AEP's transmission system is managed on a prescriptive basis. Ongoing evaluation of the system through ground and aerial inspections by System Forestry personnel, together with guidance from the program objective, provides the basic information used by Forestry Operations to develop its annual work plan. Circuit criticality, historical data, circuit voltage, location, vegetative inventory information, and land use are among the items considered when developing the annual vegetation management work plan. These plans are dynamic during the year and adjusted for changing conditions.

As succession occurs within the plant communities along the rights-of-way, these annual work prescriptions will change based on the sizes and types of vegetation present. Forestry Operations staff and their contractors continuously work to ensure the appropriate prescription is utilized to maximize effectiveness and efficiency.

Forestry Operations is a centralized organization in both reporting and budgeting. It primarily employs or contracts degreed foresters. Qualified utility line clearance contractors, as defined by ANSI Z133.1-2012, provide the labor force for the ground-based clearing and herbicide applications. FAA-licensed aerial contractors provide patrol, side trimming, and herbicide application services. Contract work is designated and inspected by AEP foresters to ensure that the work is complete, performed in a timely manner, to AEP and industry standards, at reasonable cost, and with courtesy to property owners and to the public. Foresters travel throughout their assigned regions of the AEP companies to accomplish these tasks.

2. Landowner Relationships

AEP Transmission Forestry and contract personnel utilize face-to-face communication and door cards to notify resident landowners before routine line clearance work is initiated. Great efforts are made to strike a balance between service reliability and the landowner's landscaped vegetation

AEP has invested time and resources into public education concerning proper tree care and sound environmental practices. Forestry Operations participates in many organizations such as the National Arbor Day Foundation, the Utility Arborist Association, the International Society of Arboriculture, and various state and local vegetation management organizations. AEP Corporate Communications, in cooperation with Transmission Management, has produced a brochure, *Transmission Right of Way Clearing and Maintenance, A Balanced Approach to Vegetation Management*, which is given to landowners and other community groups, outlining general policies for AEP's Transmission vegetation program.

3. Property Owner Right of Maintenance

AEP is required by law or regulation in some areas to provide private property owners with an option of maintaining vegetation within the easement on their property in lieu of herbicide use. Although AEP discourages this practice, when applicable, this option is handled through contractual agreement between the landowner and AEP on a case-by-case basis.

C. Inspections

1. Vegetation Inspections & Patrols

Since right-of-way maintenance is not on a rigid schedule, rigorous routine aerial and ground inspections are crucial to meeting the objective of the AEP TVMP.

Aerial and ground patrol inspections aid in the development of the vegetation maintenance work plan. Aerial patrols, except where the FAA or other ordinance prohibits flight, cover substantial portions of the transmission system to identify areas where remediation may be needed to prevent vegetation from interfering with circuit operation. Ground patrols are used to supplement aerial patrols and where aerial patrols are restricted.

Remediation is defined as the evaluation of a point of interest, and if necessary, taking action to resolve the identified vegetative issues.


2. Forestry Patrol Procedures

a. Patrol of the AEP Transmission System

Bi-annual patrols of the AEP Transmission System are required for all designated NERC-reportable circuits to provide Transmission Foresters a view of right-of-way conditions and judge the efficacy of the vegetation management program.

Patrol Requirements

- (1) AEP requires annual training of Transmission Forestry observers through *Transmission Forestry Aerial Patrol Procedures*.
- (2) Patrols shall be made bi-annually for all NERC-reportable circuits.
 - (a) Fall Patrol—Barring inclement weather or helicopter unavailability, the NERC-reportable circuits shall be patrolled between August 15 and November 15. The goal of this patrol is to detect areas that need to be remediated on NERC-reportable circuits and plan for future maintenance activities on these circuits.
 - (b) Spring Patrol—Barring inclement weather or helicopter unavailability, the NERC-reportable circuits shall be patrolled in the spring; this patrol shall be completed by May 21. In areas at higher elevation or with later vegetation emergence, this date may be extended to June 4. The purpose of this patrol is to monitor current conditions and to evaluate effectiveness of prior activities on all NERC-reportable circuits.

	Transmission Vegetation Management Program	Rev. 12	TVMD-001
			Page 13 of 35

-
- (3) Helicopters shall be used for aerial observations. Fixed-wing aircraft may only be used in extenuating circumstances with the approval of Manager, Forestry Operations or Director, Transmission Line Engineering.
 - (4) Forestry personnel investigate observed and reported concerns and take appropriate action to remediate any threat to safety or reliability.
 - (5) Forestry personnel should be the observers in all patrols. Forestry observers must have at least one year experience in aerial patrol work and completed the annual Transmission Forestry Aerial Patrol Procedures training. Lacking that experience, an additional qualified observer must be in the helicopter during aerial patrol. A qualified observer may substitute for the forester when approved by Transmission Forestry supervision.
 - (6) All areas requiring immediate remediation, i.e., A1 conditions (defined in section II.C.5.a, "A1 Condition" on page 16), will be documented with GPS readings and locations on the line. These areas shall be remediated within 24 hours of confirmation.
 - (7) Remediation of P1 conditions (defined in section II.C.5.b, "P1 Condition" on page 16) detected in the Spring Patrol on NERC-reportable circuits are scheduled to be completed by May 30. In areas at higher elevation or with later vegetation emergence, this date may be extended to June 14. Reports on the progress of remediation shall be included with the Aerial Patrol Log.
 - (8) Remediation of P1 conditions (defined in section II.C.5.b, "P1 Condition" on page 16) detected in the Fall Patrol on NERC-reportable circuits are scheduled to be completed by March 1 of the following year. Reports on the progress of remediation shall be included with the Aerial Patrol Log.
 - (9) Documentation of the aerial patrol is considered complete when a) scheduled circuits have been flown (and restricted locations have been inspected), b) conditions have been documented, and c) Patrol Logs have been submitted.
 - (10) In prohibited areas, alternate methods, including but not limited to ground patrol, will be used. Photography, GPS, map locations, or other means of archiving points of interest are used.

b. Patrol Schedule

Patrol schedules defined in Patrol Requirements, pg 13 and are summarized in the table below.

Table 1: Patrol Schedule

	Fall Patrol	Spring Patrol
Patrol	<ul style="list-style-type: none"> Aug 15–Nov 15. 	<ul style="list-style-type: none"> By May 21 In areas at higher elevation or with later vegetation emergence, this date may be extended to June 4.
Remediation	<ul style="list-style-type: none"> A1 Condition: addressed within 24 hours of confirmation. P1 Condition: complete by March 1 of the following year. 	<ul style="list-style-type: none"> A1 Condition: addressed within 24 hours of confirmation. P1 Condition: complete by May 30. In areas at higher elevation or with later vegetation emergence, this date may be extended to June 14.

3. Exceptions

Annual patrols of certain line sections may be interrupted by force majeure, such as severe storms or floods. If this encountered, AEP will patrol those line sections as soon as practical.

4. Action Thresholds

AEP has established a set of Risk Assessment Procedures that comprise the maximum acceptable levels of plant growth, density, and height that initiate a control action. Thresholds are given in Table 3: Transmission Line Clearance Guidelines on page 20.

5. Conditions and Actions

a. A1 Condition

- Vegetation clearances less than those stated in Column E of Table 3: Transmission Line Clearance Guidelines on page 20.
- Danger trees on or off the ROW that, if the tree fell, would result in clearances less than those stated in Column E.
- A confirmed A1 condition is considered an “Imminent Threat,” requiring the Transmission Forester to implement the Imminent Threat procedures stated in Appendix A: Imminent Threat Communication and Procedures, page 27.

b. P1 Condition

- Vegetation clearances less than those stated in Column D of Table 3: Transmission Line Clearance Guidelines on page 20 but greater than Column E.
- Danger trees on or off ROW that, if the tree fell, would result in clearances less than those stated in Column D but greater than those stated in Column E.
- P1 conditions require ground-based patrol/remediation within remediation deadlines for patrols as set forth in Table 1: Patrol Schedule, page 15.

c. P2 Condition

- Vegetation clearances less than those stated in Column B of Table 3: Transmission Line Clearance Guidelines on page 20 but greater than those stated in Column D.
- Ground-based patrols required no later the March 1st of the following year to determine a future remediation plan.

d. P3 Condition

- Vegetation clearances equal to or greater than those stated in column B of Table 3: Transmission Line Clearance Guidelines on page 20.
- P3 conditions are noted for planning purposes only.

6. High Risk Vegetation Conditions


The vegetation conditions below are classified as High Risk. These conditions require increased scrutiny or for the observer to get additional views by hovering, returning the helicopter back to the location, and/or ground inspection.

a. Tree Species

Fast-growing species: e.g., willows, elms, ailanthus, vines.

b. River/Creek Crossings

Erosion around tree trunks or other issues caused by moving water may affect vegetation.

	Transmission Vegetation Management Program	Rev. 12	TVMD-001
			Page 16 of 35

c. Wetlands

Areas with dense vegetation and ideal growing conditions.

d. Upslope Timber

Particularly dead, dying, or leaning trees.

e. Span Length and Blow Outs

Spans of longer-than-average lengths have more capability of sagging into vegetation and blowing out to edge trees.

f. Fence Rows

Vegetation growth may be accelerated by agricultural fertilization.

7. Imminent Threats

An imminent threat is a condition that threatens the reliable operation of a NERC reportable circuit. Refer to Appendix A: Imminent Threat Communication and Procedures, page 27.

D. Clearances

1. Right-of-Way Clearance Guidelines

When performing maintenance, the objective for locations on spans with less than 100' vertical clearance at maximum sag from conductor to ground is removal of all woody-stemmed vegetation to the appropriate width², leaving the cleared area of the right-of-way populated with grasses and herbaceous growth. Under certain circumstances (unique topographic and/or environmentally sensitive conditions), AEP may allow compatible, low-growing species to remain in the right-of-way. In maintained areas (mowed yards, lawns, and public areas), trees deemed compatible with safe operation of the line may remain, although AEP strongly discourages this practice. Compatible species will be limited to those that grow no more than 15' tall. Actively maintained trees that could be considered a crop such as in nurseries or orchards will be maintained in accordance with the clearance table guidelines specified in Table 2: Clearance Table Guidelines on page 18. Table 3: Transmission Line Clearance Guidelines on page 20 shows Transmission Line Clearance Guidelines.

² Upon completion of vegetation maintenance.


	Transmission Vegetation Management Program	Rev. 12	TVMD-001
			Page 17 of 35

Table 2: Clearance Table Guidelines

Right-of-Way with No Restrictions	Right-of-Way With Restrictions
< 100' Vertical Clearance Between Conductors at Maximum Sag and Ground 1. Remove all woody stemmed vegetation ² . 2. Do not allow vegetation closer than column E, Table 3. 3. Trigger distance to schedule maintenance per column D, Table 3.	< 100' Vertical Clearance Between Conductors at Maximum Sag and Ground 1. Trim or remove vegetation to meet column C, Table 3 ² . 2. Do not allow vegetation closer than column E, Table 3. 3. Trigger distance to schedule maintenance per column D, Table 3.
> 100' Vertical Clearance Between Conductors at Maximum Sag and Ground 1. Trim or remove vegetation to meet column B, Table 3 ² . 2. Do not allow vegetation closer than column E, Table 3. 3. Trigger distance to schedule maintenance per column D, Table 3.	> 100' Vertical Clearance Between Conductors at Maximum Sag and Ground 1. Trim or remove vegetation to meet column C, Table 3 ² . 2. Do not allow vegetation closer than column E, Table 3. 3. Trigger distance to schedule maintenance per column D, Table 3.

2. Restrictions

In areas where easements, other legal agreements, or regulations restrict vegetation management practices, the maximum allowable amount of vegetation will be removed or otherwise controlled. AEP will annually monitor locations where these clearances cannot be achieved and determine if more frequent maintenance may be required in order to assure the safe, reliable operation of the circuit.

AEP will endeavor to cut or trim so that upon completion of the work, no vegetation will be closer to conductors at maximum sag than the distances outlined in Columns A and C in Table 3: Transmission Line Clearance Guidelines on page 20. Distances are based on completed work meeting or exceeding the minimum approach distances to energized conductors for persons *other than qualified* line-clearance arborists and qualified line-clearance arborist trainees (Columns A and C in Table 3: Transmission Line Clearance Guidelines on page 20).

Right-of-Way Restrictions are recorded in the restriction log.

3. Restriction Mitigation

AEP has implemented procedures for achieving sufficient clearances in those locations on its rights-of-way where AEP is restricted from attaining Clearance 1 listed in Column C of Table 3: Transmission Line Clearance Guidelines. This is described in AEP's Right-of-Way Clearance Guidelines; see section II.D.1, "Right-of-Way Clearance Guidelines" on page 17.

Right-of-Way Restrictions are recorded in the restriction log.

4. Minimum Approach

Additional maintenance should be scheduled when vegetation will encroach within the minimum approach distances from energized conductors for *qualified* line-clearance arborists and qualified line-clearance arborist trainees (Columns A and D in Table 3: Transmission Line Clearance Guidelines on page 20).

Table 3: Transmission Line Clearance Guidelines

Column A Nominal Voltage (kV phase to phase)	Column B³ NERC Clearance 1 (no restrictions) Desired Clearance between Conductor^{4, 5, 6} & Vegetation	Column C^{2, 7} NERC Clearance 1 (with restrictions) Desired Clearance between Conductor^{3, 5} & Vegetation	Column D⁶ ANSI Clearance between Conductor^{3, 5} & Vegetation	Column E⁸ NERC Clearance 2 between Conductor^{3, 5} & Vegetation
765 kV	45'	35' 00"	27' 04"	14' 0"
500 kV	45'	26' 08"	19' 00"	10' 0"
345 kV	30'	20' 05"	13' 02"	7' 6"
230 kV	30'	16' 05"	7' 11"	5' 2"
161 kV ⁹	25'	14' 00"	6' 00"	3' 5"
138 kV ⁹	25'	13' 02"	5' 02"	2' 11"
88 kV & 115 kV ⁹	25'	12' 04"	4' 06"	2' 6"
69 kV ⁹	25'	10' 09"	4' 02"	2' 6"
46 kV & 40 kV ⁹	20'	10' 00"	3' 04"	2' 6"
34.5 kV & 23 kV ⁹	20'	10' 00"	3' 00"	2' 6"

³ Application of herbicides will be considered as meeting these guidelines, as long as all treated vegetation meets or exceeds the desired clearance from maximum sag (Table 3: Transmission Line Clearance Guidelines, Columns A and C).

⁴ Conductor at maximum sag condition.

⁵ Desired clearance to maintain reasonable clearing cycles.

⁶ *AEP Guideline Accounting for Maximum Conductor Sag and Blowout for Vegetation Management* is to be used to adjust the conductor's found field condition to the maximum sag condition taking into account the conductor size, span length, elevation, and current temperature.

⁷ ANSI Z133.1- 2012.

⁸ IEEE Standard 516-2003, Section 4.2.2.3, Tables D.3 and D.5, calculated clearances (Clearance 2).

⁹ Applies only to circuits that have been designated as critical or operationally significant by the Regional Transmission Organization.

E. Personnel Qualifications

AEP's TVMP is designed and implemented by personnel qualified and experienced to perform their job responsibilities and/or provide oversight. These personnel, through ongoing training, maintain certifications and licenses as applicable to their roles and responsibilities.

Qualifications of personnel implementing the TVMP may include:

- Physical capability of inspecting lines that are difficult to access.
- Ability to identify:
 - Compatible versus incompatible species.
 - Hazard and danger trees.
 - Vegetation conditions that pose a threat to transmission system reliability.
 - Vegetation growth patterns.
 - Line construction and voltage types
- Familiarity with vegetation control equipment and techniques, including capabilities and limitations.
- Proficiency in recording data with sufficient accuracy and completeness for further follow-up on inspection findings and results.
- Ecology, including:
 - Vegetation succession in the right-of-way environment.
 - Compatible species and practices that promote their establishment.

Utility line clearance contractors shall be qualified and in compliance with applicable industry standards (e.g., OSHA, ANSI, NESC).

III. Annual Plan

A. Annual Work Plan

An annual transmission vegetation management work plan is developed by AEP. Using inspection information and various data from other sources, specific transmission circuits are identified and prioritized for inclusion in the upcoming year's plan. The circuits are further prioritized based on any potential for tree-caused line contacts, criticality of the circuit, etc. For circuits requiring attention, AEP work plans may consist of manually or mechanically removing and/or trimming trees on and off the right-of-way, selective or broadcast applications of herbicides, either aerially or from the ground, and the application of tree-growth regulators. The range of required work may either involve management of the vegetation along the entire line or addressing individual locations of concern.

1. Annual Plan Development

The annual work plan identifies the facilities to be worked in the current year. The plan is documented and finalized by late January.

2. Start and End Dates

The annual work plan starts on January 1 and ends on December 31.

B. Maintenance Schedule

AEP's transmission vegetation management program utilizes a variety of management techniques. Maintenance does not occur on a rigid "cycle" basis; rather, the maintenance technique and schedule are driven by the condition of the vegetation.

C. Unscheduled Work

Transmission Forestry Operations deals with a dynamic, living system. Variables such as tree species, weather patterns, and soil conditions all affect tree growth, growth rates of trimmed trees, and other vegetation.

Even the most aggressive line clearance program must make allowances for responding to emerging vegetation conditions. AEP Transmission Forestry Operations dedicates a portion of its resources to this type of work that is incremental to the work plan. Such work may include isolated stands of fast-growing trees, vines growing on AEP poles and hardware, fire- or insect-damaged stands adjacent to the right-of-way, or trees located in slip or slide areas.

D. Specifications

Reference the *AEP Forestry Goals, Procedures & Guidelines for Distribution and Transmission Line Clearance Operations* document listed on page 10.

E. Right-of-Way Maintenance Methods

1. Annual Work Planning/Notification

Landowners are normally notified prior to vegetation management activities on their properties. Contractor personnel are often utilized to perform this notification and are trained to evaluate vegetation management requirements so that they can communicate these requirements to property owners. As required in some states, legal advertisements are posted to advise non-resident property owners of impending vegetation management activity. Should a property owner refuse to allow the contractor to perform the required work, AEP foresters are notified and the necessary steps to complete the work are taken, up to and including legal action against the property owner. If a property owner refuses AEP access to clear trees on an valid transmission easement, or if the easement rights are insufficient to ensure the program objectives are obtainable, then foresters, in concert with operational managers, right-of-way agents, legal and/or public policy personnel will document the condition and direct mitigating actions.

2. Tree Removal

The AEP transmission vegetation management program emphasizes tree removal to promote long-term vegetation control and to minimize future maintenance expenditures. In urban areas, tree replacement, with low-growing species, and stump grinding may be offered as an incentive for property owners to allow the removal of larger or fast-growing trees on or near the rights-of-way. AEP foresters and contractor personnel inspect the right-of-way for danger trees (those trees considered a hazard to AEP's facilities growing outside of the normally maintained right-of-way) during scheduled maintenance. Suspected danger trees are addressed on a case-by-case basis with the responsible forester who has the final decision on what action is appropriate.


3. Tree Pruning

When tree removal is not practical or feasible, tree pruning¹⁰ may be employed. Pruning may be carried out by a number of means.

Pruning is a part of AEP Transmission Forestry Operations' contract with all qualified utility line clearance contractors. Fast-growing trees, where removal permission is not obtained, are pruned to yield greater clearance distances than slower-growing varieties.

Mechanical pruning operations employ a variety of boom-mounted saws on vehicles capable of traversing the rights-of-way. Access, terrain, and tree heights influence the type of equipment used. When applicable, rights-of-way may be maintained with an aerial saw. These rights-of way possess one or more of the following characteristics: steep, mountainous terrain; limited access; or prohibitive costs to prune by conventional means.

¹⁰ During manual pruning operations, qualified line clearance arborists, as defined by ANSI Z133.1-2012, seek to prune trees according to standards set by the International Society of Arboriculture, the American National Standards Institute, and the Tree Care Industry Association. The American National Standard for *Tree Care Operations – Tree, Shrub, and Other Woody Plant Maintenance – Standard Practices (Pruning)*, ANSI A300 (Part 1).

	Transmission Vegetation Management Program	Rev. 12	TVMD-001
			Page 23 of 35

4. Clearing

Manual clearing is employed where the terrain is too steep or rough for mechanized equipment, where the vegetation is too tall for herbicide applications and aerial application is not possible, or where the immediate removal of vegetation is necessary. Contract employees use chainsaws or brush saws to selectively remove vegetation from the rights-of-way.

Mechanical clearing may be employed where terrain and access allow and where the vegetation is not too large for mechanical equipment to handle, where the vegetation is too tall for herbicide applications, where aerial application is not possible, or where the immediate removal of vegetation is necessary. Use of mechanical equipment in some locations and during certain times of the year may result in rutting and erosion or soil compaction problems and may not be acceptable to some property owners.

5. Herbicide Application

Manual and mechanical clearing without follow-up herbicide applications does not control the root systems of incompatible vegetation and often increases the future maintenance requirements in the areas where it is employed. AEP Transmission Forestry strives to convert the vegetative cover types on its transmission rights-of-way to low growing grass-forbs-herb covers that inhibit the germination, establishment, and growth of most tree species. Aerial, high-volume foliar, low-volume foliar, ultra-low-volume foliar, cut stubble, stumps, basal, and granular applications may be employed.

United States EPA registered herbicides are applied by licensed pesticide application businesses contracted by AEP.

6. Debris Cleanup

Debris from these operations is left on the rights-of-way to decompose and return nutrients to the soil and to reduce the possibility of soil erosion. Any brush that falls into roadways, waterways, fences, lawns, or pastures is moved to a wooded area of the right-of-way or may, at times, be chipped and/or otherwise removed. Logs may be left in tree lengths on location or as designated by AEP foresters. The merchantable value of logs will be preserved as much as possible.

7. Tree Growth Regulators

AEP Transmission Forestry employs tree growth regulators (TGRs) to reduce the frequency and amount that trees must be trimmed. TGRs control growth, allowing a tree to use its reserves to survive disease and insect attacks and to withstand environmental assaults like drought and pollution.

F. New Construction Clearing

New transmission lines are designed and cleared to support AEP's transmission forestry vegetation management program.

G. Inspections (Work Quality)

AEP Foresters inspect work to ensure that contract forestry crews have maintained adequate clearances to help prevent vegetation contact outages, follow proper arboricultural techniques, and perform their work safely. Work verification logs and right-of-way maintenance audit forms are retained as documentation.

Documentation generated during maintenance activities are normally retained in AEP files until succeeding maintenance is performed on said line or for a minimum of five years, whichever is longer. When work is performed on a circuit, data is collected about tree trimming, tree removals, brush cut, or brush sprayed, and miles accomplished, thus supplying a history of quantity, productivity, and cost.

AEP has a process for documenting the annual vegetation management activities to ensure the following:

- Scheduled work is properly identified and listed in the work plan.
- Adjustments to the work plan are properly noted and recorded.
- Timesheets and maintenance methods employed are noted for each type of work on each project listed in the work plan.
- Work quality inspections are performed and work completed meets company specifications.
- Completed work is recorded to ensure that progress on the work plan is tracked.

IV. Reporting

Sustained transmission line outages that are determined to have been caused by vegetation are reported to the Regional Entities or their designees. The supporting document AEP utilizes to identify vegetation outage information is a periodic report generated from an internal AEP system, the Transmission Outage Report (TOR) system. TOR reports list vegetation-related outages by Regional Entities. The report lists the names of circuits where outages occurred; operated voltages; the date, time, and duration of the outage; and a description of the cause of the outage.

A. Recording Outages Caused by Vegetation

1. Outage information

All outages determined to be caused by vegetation are investigated by a qualified transmission vegetation management employee and information is obtained specific to the line designation, voltage, date and time of the disturbance, species, location relative to the line, NERC outage category, and duration of the outage if it was sustained. NERC's outage categories are defined as follows:


- Category 1—Grow-ins: Outages caused by vegetation growing into lines from vegetation inside and/or outside of the ROW.
- Category 2—Fall-ins: Outages caused by vegetation falling into lines from inside the ROW.
- Category 3—Fall-ins: Outages caused by vegetation falling into lines from outside the ROW.

2. Reports

A standard report format is used to document the outages caused by vegetation with the information specific for each outage and pictures included when practical.

B. Reporting Outages Caused by Vegetation

Outages caused by vegetation on NERC critical facilities are reported on a quarterly basis (or more frequently if required) to the Regional Entity.

	Transmission Vegetation Management Program	Rev. 12	TVMD-001
			Page 26 of 35

Appendix A: Imminent Threat Communication and Procedures

An imminent threat is a condition that threatens the reliable operation of a NERC-reportable circuit or a Regional Transmission Organization-reportable circuit and must be mitigated, within 24 hours of confirmation. This condition is usually characterized by either vegetation or danger trees that are approaching or threatening to approach the minimum vegetation clearance distance to the conductor. For locations found during patrols, routine work, or other observations, where a potential imminent threat condition is confirmed by transmission forestry, an immediate notification¹¹ to the local dispatching authority is required. This will allow for mitigating actions, such as removal of the vegetation, temporary reduction in circuit rating, or switching the circuit out of service, until the imminent threat is relieved.

Regional Transmission Organizations (PJM, ERCOT, SPP RTO) grant utility operators the right to take emergency actions to prevent an imminent emergency condition or to restore the transmission grid to a secure state in the event of a system emergency. When an imminent threat has been confirmed, Forestry, Engineering, Transmission Field Services, Planning, the Transmission Dispatch Center, the System Control Center Operator, and other parties, as required, will coordinate appropriate actions¹² to mitigate the threat until the vegetation threat is relieved.

When a vegetation issue is found by AEP personnel (non-Forestry), such as AEP line maintenance personnel, other experienced observers, or the general public, notification shall be sent either to the Transmission Dispatch Center, Forestry personnel, Distribution Dispatch Center, or Customer Solutions Center, as identified below. This is also summarized in an Imminent Threat Communication Flow Chart shown in on page

A. AEP Forestry Personnel

When AEP Transmission Forestry personnel (Forestry) identify a potential vegetation issue, e.g., during aerial patrol, they should notify additional Forestry designated personnel as needed. If Forestry personnel have confirmed a vegetation issue with clearances less than Column E of Table 3: Transmission Line Clearance Guidelines on page 20, they shall immediately¹¹ notify the Transmission Dispatch Center. The Transmission Dispatch Center shall capture the date and time in the Dispatcher Operating Log. After rectifying the vegetation issue, Forestry personnel shall follow up with documentation of the action taken, completing the Vegetation Imminent Threat Incident Report and the Forestry Supervisor will route the report to management. Alternatively, if Forestry's professional evaluation reveals the vegetation condition is not an imminent threat, they should notify the Transmission Dispatch Center as needed.

¹¹ NOPR RM-12-4-000, pg 50, #85 (10/18/2012) – NERC explains that the obligation to notify without intentional delay generally “can be understood to include an immediate (within 1 hour of observation) communication notwithstanding a safety issue to personnel, other immediate priority maintenance functions to ensure reliability or system stability, or communication equipment failures that precludes immediate communication.”

¹² NERC Standard FAC-003-2 Technical Reference, pg 30 (9/30/2011) – Appropriate actions may include a temporary reduction in the line loading, switching the line out of service, or positioning the system in recognition of the increasing risk of outage on that circuit.

B. AEP non-Forestry Personnel

1. Option 1: Notification to AEP Forestry Personnel (Preferred)

When AEP personnel (non-Forestry) find a vegetation issue, they may notify AEP Forestry of this issue. AEP Forestry personnel shall notify the Transmission Dispatch Center, as needed. If notified, the Transmission Dispatch Center captures the date and time in the Dispatcher Operating Log. AEP Forestry will investigate the potential threat as outlined in the procedures in Section A: AEP Forestry Personnel, pg. 27.

2. Option 2: Notification to Transmission Dispatch Center

When AEP personnel (non-Forestry) find a vegetation issue, they may notify the Transmission Dispatch Center of a potential vegetation issue, and the Transmission Dispatch Center shall notify AEP Forestry personnel and capture the date and time in the Dispatcher Operating Log. AEP Forestry will investigate the potential threat as outlined in the procedures in Section A: AEP Forestry Personnel, pg. 27.

3. Option 3: Notification to Distribution Dispatch Center


When AEP personnel (non-Forestry) find a suspected vegetation issue, they may notify the AEP Distribution Dispatch Center. The Distribution Dispatch Center shall then notify the Transmission Dispatch Center. The Transmission Dispatch Center will capture the date and time in the Dispatcher Operating Log and notifies AEP's Forestry personnel. The Transmission Dispatch Center will note this in the Dispatcher Operating Log. AEP Forestry will investigate the potential threat as outlined in the procedures in Section A: AEP Forestry Personnel, pg. 27.

4. Option 4: Notification to AEP Customer Solution Center

When AEP personnel (non-Forestry) find a vegetation issue, they may notify AEP Customer Solution Center, the same as non-AEP personnel in Section C: Non-AEP Personnel.

C. Non-AEP Personnel

When non-AEP personnel find a suspected vegetation issue, the preferred notification is to an AEP Customer Solution Center. Notifications can come from neighboring utilities, police, fire, other dispatch centers, or the general public. The AEP Customer Solution Center immediately notifies the AEP Distribution Dispatch Center, who with the AEP Transmission Dispatch Center, determines if the line is transmission. The Transmission Dispatch Center captures the date and time in the Dispatcher Operating Log and notifies AEP's Forestry personnel. AEP Forestry will investigate the potential threat as outlined in the procedures in Section A: AEP Forestry Personnel, pg. 27.

	Transmission Vegetation Management Program	Rev. 12	TVMD-001
			Page 28 of 35

The completed Forestry Vegetation Imminent Threat Incident Report contains the documentation of actions taken because of reported conditions where vegetation may imminently cause an outage. Reports are to be kept on file.

Vegetation Imminent Threat Incident Report Rev. 7/02/2013

Forester: _____
 TDC Case # _____

Part I – Basic Information

Line Name: _____
 Circuit Name: _____
 Structure # _____ In _____ Out _____
Right-of-Way
yes or no yes or no
 Operating Voltage: (i.e. 33kV) _____
 Date and Time of Confirmation: _____
 Location Information: (provide as much information as possible)
 Property Owner: _____
 County/Parish: _____
 State: _____

Part II – Vegetation Information (provide as much information as possible)

Species: _____
 Estimated Height: _____
 Estimated Age: _____
 DBH: _____

Part III – Circuit Parameters at Time of Discovery/Notification

(at Time of Discovery/Notification)
 Conductor Height: _____ Time: _____
 Circuit Electrical Load: _____
 Estimated Ambient Air Temperature: _____
 Estimated Wind Speed: _____
 Weather Conditions: _____
 Conductor Size and Type: _____
 Percent Loading _____

Part IV – Action Taken:

Transmission Operations

<input type="checkbox"/>	Operations-Reduced Load	<input type="checkbox"/>
<small>yes or no</small>	<small>date and time</small>	<small>date and time</small>
<input type="checkbox"/>	Operations-Out of Service	<input type="checkbox"/>
<small>yes or no</small>	<small>date and time</small>	<small>date and time</small>
<input type="checkbox"/>	Returned to Normal Load	<input type="checkbox"/>
<small>yes or no</small>	<small>date and time</small>	<small>date and time</small>
<input type="checkbox"/>	Returned / In-Service	<input type="checkbox"/>
<small>yes or no</small>	<small>date and time</small>	<small>date and time</small>

Circuit/Section Removed from Service:

<input type="checkbox"/>	Removed from Service	<input type="checkbox"/>
<small>yes or no</small>	<small>date and time</small>	<small>date and time</small>
<input type="checkbox"/>	Returned / In-Service	<input type="checkbox"/>
<small>yes or no</small>	<small>date and time</small>	<small>date and time</small>

Vegetation Condition Rectified:

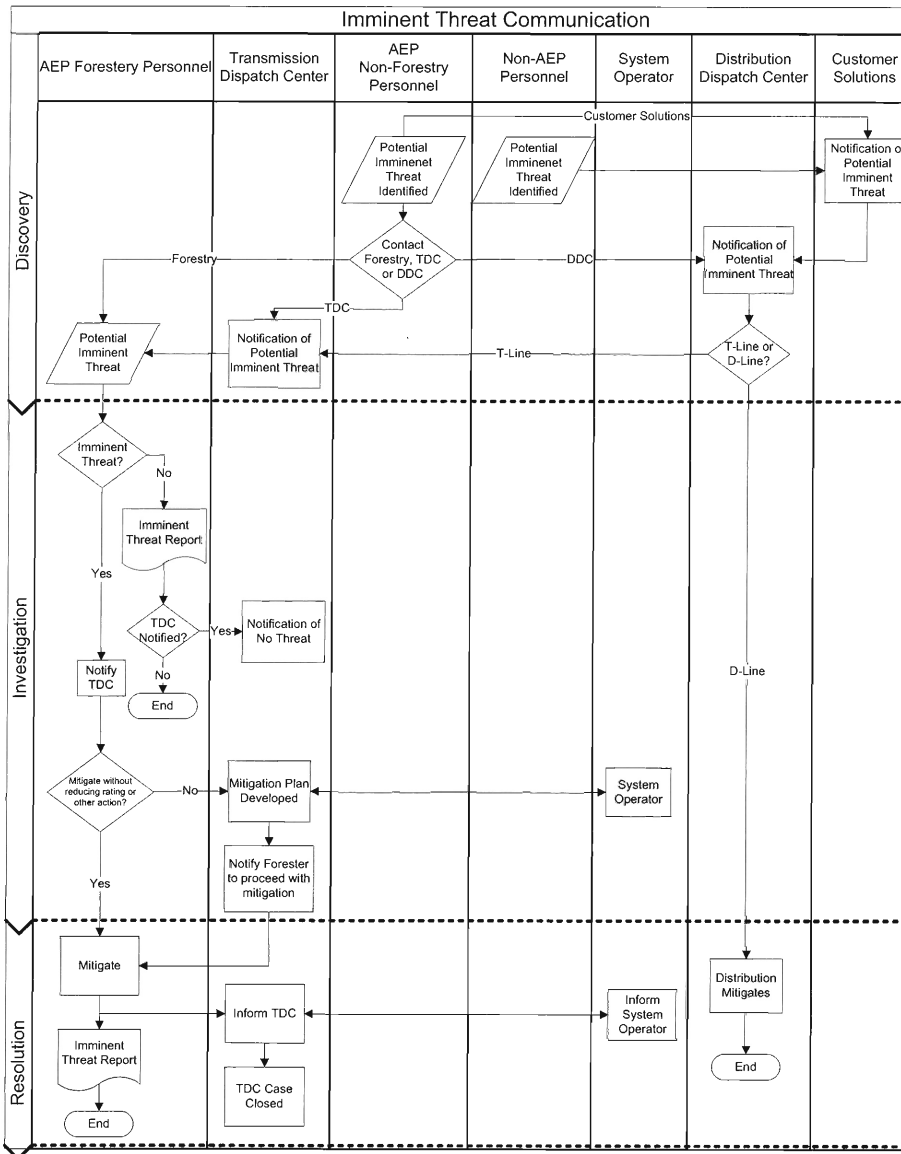
<input type="checkbox"/>	<input type="checkbox"/>
<small>yes or no</small>	<small>If yes, date and time</small>

Comments:

Describe the circumstances of the event.

 Forestry Supervisor Approval date

Appendix B: Imminent Threat Communication



Appendix C: Subject Matter Experts

FAC-003-1 Requirement	Description	Preparer	SME	Reviewer
R1.-M1.	TVMP document	Kevin B. Patton System Forestry Coordinator 614-716-1231 kbpatton@aep.com	E. K. Engdahl Staff Engineer 614-552-1676 ekengdahl@aep.com	J.E. Momme Director, Trans. Line Engineering 614-552-1180 jemomme@aep.com
R1.1.-M1.1.	Inspection schedule	Kevin B. Patton System Forestry Coordinator 614-716-1231 kbpatton@aep.com		J. E. Schechter, Manager, P&C Asset Engineering 614-552-1908 jeschechter@aep.com
R1.2.-M1.2.	Clearance document	Jacqueline M. Rich Engineer III 614-552-1391 jmrich@aep.com	E. K. Engdahl, Staff Engineer 614-552-1676 ekengdahl@aep.com	
R1.2.1.	Clearance 1			
R1.2.2.	Clearance 2			
R1.2.2.1	Unknown transient overvoltage			
R1.2.2.2	Known transient overvoltage	Barrett Thomas Engineer I 918-599-2386 bathomas@aep.com R. J. Whitaker Engineer I 540-562-7054 rjwhitaker@aep.com		
R1.3.-M1.3.	Personnel qualifications	Kevin B. Patton		
R1.4.-M1.4.	Vegetation Restrictions	System Forestry Coordinator 614-716-1231 kbpatton@aep.com		
R1.5.-M1.5.	Imminent threat	Lynn E. Hayward Lead Engineer 614-552-7244 lehayward@aep.com	E. K. Engdahl Staff Engineer 614-552-1676, ekengdahl@aep.com	
R2.-M2.	Annual Veg. Mgt. plan	Kevin B. Patton System Forestry Coordinator 614-716-1231 kbpatton@aep.com		
R3.-M3.	Quarterly Outage Reports	Lynn E. Hayward Lead Engineer 614-552-7244 lehayward@aep.com	J.E. Momme Director Trans. Line Engineering 614-552-1180 jemomme@aep.com	
R3.1.	Multiple Outages in 24 Hrs.			
R3.2.	Reporting Exemptions			
R3.3.	Outage circuit, date, time, description, cause, etc.			
R3.4.	Outage Categories			
R3.4.1.	Category 1 - Grow-ins:			
R3.4.2.	Category 2 - Fall-ins:			
R3.4.3.	Category 3 - Fall-ins:			

Appendix D: FAC-003-1 Requirements Addressed

The following table shows where specific requirements of FAC-003-1 have been addressed in this document.

FAC-003-1 Requirement	Location(s) in Document
R1—Transmission Owner's Formal Program	TVMD-001 II.A. The Transmission Vegetation Management Program (TVMP), Introduction and Purpose, page 11
R1—Transmission Owner's Objectives	TVMD-001 II.B. Vegetation Management Objective, pages 11–13
R1—Transmission Owner's Approved Practices, Procedures, and Work Specifications	TVMD-001 III.E. Right-of-Way Maintenance Methods, pages 23–24 TVMP-001 III.F. New Construction Clearing, page 24 <i>Also AEP Forestry Goals, Procedures & Guidelines for Distribution and Transmission Line Clearance Operations (May 14, 2009)</i>
R1.1—Inspections and Patrols	TVMD-001 II.C.1. Vegetation Inspections & Patrols, page 13
R1.2—Clearances	TVMD-001 II.D.1. Right-of-Way Clearance Guidelines, page 17
R1.3—Personnel Directly Involved	TVMD-001 Document Team, page 7 TVMD-001 III.E. Personnel Qualifications, page 21
R1.4—Restrictions	TVMD-001 II.D.2, Restrictions page 18
R1.5—Imminent Threat	TVMD-001 II.C.7. Imminent Threats, page 17 TVMD-001 Appendix A: Imminent Threat Communication and Procedures, page 27 TVMD-001 Appendix B: Imminent Threat Communication, page 30
R2—Work Plan	TVMD-001 III.A. Annual Work Plan, page 22 TVMD-001 III.C. Unscheduled Work, page 22 TVMD-001 0. Inspections (Work Quality), page 25
R3—Reporting	TVMD-001 IV. Reporting, page 26
R4—Quarterly Reporting to NERC	Not Applicable to AEP

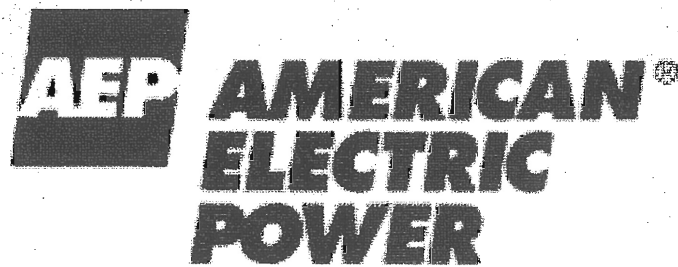
Appendix E: TVMP Internal Mailing List¹³

Name/Lotus Notes Group	Department	Title	Role
Smith, Scott N	Trans Grid Dev & Portfolio Svcs	Senior Vice President	A
Moore, Scott P	Trans Eng & Proj Svcs	Vice President	A
Kirkpatrick, Thomas L	Cust Svcs, Mktg, & Dist Svcs	Vice President	A
Crowder, J Calvin	Electric Transmission Texas	Exec Dir. Elec. Trans TX	A
Sastry, Ram	Customer and Distr Services	Dir Distribution Svcs Suppt	A
Recker, Daniel J	Trans Projects Engrg	Mng Dir Trans Projects Engrg	A
Momme, Jeffrey E	Transmission Line Engineering	Dir. Trans. Line Projects Engineering	A
Johnson, Paul B	Transmission Operations	Mng. Dir. Transmission Ops	A
Fecho, Thomas R	GET Eng Elec Interct Plng	Mgr-Gen&Elec Intrcnctn Plngg	A
Parrish, T. David	Trans Line Engrg	Mgr. Trans. Line Design Standards	C
Wagner, Robert C	Trans Field Services	Vice President	I
TRELCOMP	Transmission Reliability Compliance	Group Mailing List	I
Schaffer, Thomas O	Trans Line Engrg Right-of-Way	Mgr. Trans. Right-of-Way	I
Correa, Robert D	Trans Line Engrg Right-of-Way	Supv Trans Right of Way	I
Jones, Paul R	Trans Line Engrg Right-of-Way	Supv Trans Right of Way	I
McNally, Richard P	Trans Line Engrg Right-of-Way	Supv Trans Right of Way	I
Merrifield, Ned O	Trans Line Engrg Right-of-Way	Supv Trans Right of Way	I
Nguyen, Thuy P	Trans Tech Svcs Wrk Plan	Mgr. Trans Work Planning	I
Fuller, Terry A	GET Eng Elec Interct Plng	Senior Engineer	I
Daniels, David	Generation NERC Compliance	Senior Engineer	I
Carlson, John P	ESH Management Systems	Mgr ESH Mngmnt System I	I
Liebrecht, John J	Trans Tech Svcs Wrk Plan Line	Supv Planning & Engineering II	I
Ordner, Lance	Trans Tech Svcs Wrk Plan Line	Engineer I	I
Cotant, Ronald D	Trans Tech Svcs Wrk Plan Line	Lead Engineer	I
York, Leo	Electric Transmission Texas	Mgr Transmission Bus Dev Sr	I
Macias, Michael M	Electric Transmission Texas	ETT Technical Project Lead Sr	I
Killingworth, Kevin	Adv Studies & Technology	Senior Engineer	I
Schechter, John E	Trans Stat Prot Engrg Gahanna	Mgr Prot & Cntrl Asset Engrg	I

¹³ Role definitions: A – Accountable; C – Consult; I – Informaed; R – Responsible; S - Support

Name/Lotus Notes Group	Department	Title	Role
Garrett, James G	Trasm Reliability Compliance	Trans Relblty Complc Spec I	R
Sherry, Walter A	System Forestry	Mgr. Forestry Operations	R
T Forestry	Trans. Foresters and Forestry Management	Group Mailing List	R
Schnell, Edward G	Transmission Dispatching	Dir. Transmission Dispatching	R
Kunkel, Dennis K	Trans Dispatch Corpus Christi	Mgr. Transmission Dispatching	R
Milford, David L	Trans Dispatch Shreveport	Mgr. Transmission Dispatching	R
Moses, Clinton D	Trans Dispatch Columbus	Mgr. Transmission Dispatching	R
Guill, Darrell E	Trans Dispatch Roanoke	Mgr. Transmission Dispatching	R
Wagner, Billy W	Roanoke Dist Dispatch	Mgr. Distribution Dispatching	R
Ivinskas, Robert J	AEP Ohio Distr Dispatch	Mgr. Distribution Dispatching	R
Kratt, Thomas A	Ft Wayne Distrib Dispatch	Mgr. Distribution Dispatching	R
Apple, Dwayne L	PSO Distribution Dispatch	Mgr. Distribution Dispatching	R
Guin, Gary A	SWEPCO Distrib Dispatch	Mgr. Distribution Dispatching	R
Dunlap IV, Hauge	C Christi Distrib Dispatch	Mgr. Distribution Dispatching	R
Williams, Michael A	Kentucky Distribution Dispatch	Dispatch Supv. I	R
Patton, Kevin B	System Forestry	System Forestry Coord	R
Engdahl, Eric K	Trans Line Engrg	Staff Engineer	R
Rich, Jacqueline M	Trans Line Eng Gahanna-Roanoke	Engineer III	R
Thomas, Barret A	Trans Line Engrg Tulsa Group	Engineer I	R
Whitaker, Robert	Trans Line Eng Gahanna-Roanoke	Engineer I	R
Hayward, Lynn E	Transmission Line Engrg Admin	Lead Engineer	R
Krause, Stan A	Trans Line Engrg Tulsa Group	Mgr. Trans. Line Engineering	S
Persing, Carl A	Trans Line Eng Gahanna-Roanoke	Mgr. Trans. Line Engineering	S
TLPE All	Transmission Line Project Engineering	Group Mailing List	S
Hostetler, Timothy A	Transmission Operations Engineering	Mgr. Operations Engineering	S
TCI PM ALL	Transmission Project Mgt. & Control	Group Mailing List	S
Sauriol, Dennis R	Transmission Real Time Operations	Mgr. Trans Ops. Reliability	S
Emberger, Joseph H	Trans Const Mgmt – Gahana	Mgr – Trans Construction II	S

Name/Lotus Notes Group	Department	Title	Role
Matthews, Charles D	Transmission Field Services	Mng. Dir. Transmission West	S
Rogier, Daniel J	Transmission Field Services	Mng. Dir. Transmission East	S
Boezio, Daniel R	Transmission Field Services	Dir Trans Region Tech Support	S
Cook, James K	Transmission Field Construction East	Dir Trans Region Construction	S
McCord, Natalie J	Trans Field Construction West	Dir Trans Region Construction	S
Workman, Mark A	Trans Construction Mgmt	Mng Dir Trans Constr Mgmt	S
Colvin, Kenneth A	Trans Construction Mgmt – Gahana	Mgr – Trans Construction II	S
Galyean, Rue F	Trans Construction Mgmt – Tulsa	Mgr – Trans Construction II	S



AEP Forestry

Goals, Procedures & Guidelines for Distribution and Transmission Line Clearance Operations

May 14, 2009

Goals, Procedures & Guidelines for Distribution and Transmission Line Clearance

TABLE OF CONTENTS

FORWARD	Page
A. <i>Introduction</i>	3
B. <i>Definitions</i>	3
I. CONTRACTOR GUIDELINES	
A. Safety	4
B. Personnel	4
C. Equipment	4
D. Overtime	5
E. Work Procedures	5
F. Public Relations	6
G. Refusals	6
H. Damage Claims and Complaints	6
II. Performance Guidelines	
A. Removals	7
B. Pruning	8
C. Clearances - Distribution	8
D. Clearances – Transmission	10
E. Hangers and Clean-up	11
F. Clearing and Re-clearing	12
G. Herbicide Applications	13
H. Tree Growth Regulator Applications	14
III. Appendix I – Distribution Clearance	15
Appendix II – Transmission Clearance	17

AEP System Forestry Guidelines

Foreword

A. Introduction

The purpose of these AEP Forestry Guidelines is to document and inform AEP employees and its contractors of important criteria, practices and procedures pertaining to initial vegetation clearing for construction projects and the maintenance of rights of way. AEP incorporates these guidelines into each tree service contract; a copy shall be kept in all vegetation management contractor's vehicles. These guidelines are for the sole and exclusive use of the contractor and are to be read consistently with other contract documents by and between AEP and the Contractor.

B. Definitions

Brush: Woody stem vegetation less than four (4) inches DBH.

Clearing: The physical cutting and/or removal of woody stem vegetation within the right of way.

DBH: (Diameter at Breast Height). The diameter of a tree measured at the height of 4-1/2 feet above the ground on the uphill side.

Danger Tree: A tree considered a potential hazard to AEP's facilities positioned outside of the normally cleared right-of-way.

Debris: Non-vegetative material such as pop bottles, cans, wire, paper and old tires.

Directional Pruning: The reduction of a tree's crown in a manner that provides increased conductor clearance by pruning to direct growth of the upper crown away from the conductors.

Fallen Tree: A tree lying on the ground not cut by the Contractor.

Hanger: A limb cut from a parent stem or bole of a tree as part of the line clearance pruning procedure left aloft caught and held by the other branches of the tree.

Hazard Tree: A tree considered a potential threat to the safety and reliability of AEP's facilities growing within the normally maintained right-of-way.

Log: The merchantable portion of a tree as designated by AEP.

Lopping: The cutting of limbs and slash so that they lie in contact with the ground or as otherwise designated by AEP.

Mowing: The mechanical cutting of woody stem vegetation within the right-of-way.

Prescription: The plan prepared for each circuit or unit of work. It designates the vegetation to be maintained, the method(s) of maintenance, and who will perform the work.

Removal: The complete cutting down of trees at or near the ground line. AEP shall specify the disposal method.

Slash: The un-merchantable portion of a tree as designated by AEP.

Tree: Woody stem vegetation greater than four (4) inches DBH.

I. Contractor Guidelines

A. Safety

1. Protecting the safety of the public is of utmost importance to AEP. Contractors shall regard safety as their first priority. Contractors and their employees will recognize and follow all laws, rules and regulations regarding public and worker safety. Any safety related incidents (e.g., personal injury, vehicle accident, outages, flashes, near miss, customer issues, etc.) that occur on the job must be reported to the appropriate AEP personnel as soon as possible.
2. All contact incidents outages or operations caused by contract crews shall be reported to the appropriate AEP Dispatch center and Forestry immediately.

B. Personnel

1. If required by state or local laws and regulations the contractor shall have an ISA Certified Arborist available.
2. No private work may be solicited or worked by Contractor employees while on AEP time. Contractors shall not receive compensation from anyone except AEP for tree work that is a part of AEP's Forestry program. The consequences will be crew and/or contractor disciplinary action.

C. Equipment

1. Contractors shall provide sufficient equipment in working order to operate their business.
2. The minimum number of chain saws on the job shall equal the number of personnel on the crew, or as per contract agreement. Chainsaws shall not be billed separately unless approved by AEP Forestry personnel.
3. Each climber shall be provided with a complete set of equipment including: rope, saddle, chainsaw, pruner and handsaw. Each tree crew shall be properly equipped so that, if necessary, a tree rescue can be performed.

The use of spurs/climbers/hooks should be avoided. Where their use is necessary (as in the removal of some trees or in climbing trees, which do not provide a notch in which to tie in) only qualified persons shall be permitted to use them.

D. Overtime

Overtime is billable for work performed outside the scope of the normal work schedule.

E. Work Procedures

1. Contractor practices shall be compliance with applicable industry standards (e.g., ANSI, OSHA, NESC) whenever practical unless the use of such standards increases the risk of injury or property damage.
2. Changes in the workweek due to inclement weather, equipment breakdowns or other circumstances must have prior approval by AEP Forestry personnel.
3. The contractor will be responsible for the development of a plan to complete the assigned tasks. The assigned tasks must be performed in a systematic way that follows this plan. Some examples are: beginning work at substations, working between protection devices, or other methods to prevent inefficiency and/or skipped work. The plan must meet AEP approval before work begins.
4. It is the Contractor's responsibility to ensure that the plan is followed, including time estimates to complete the assigned tasks.
5. Contractor shall provide daily work locations to AEP, including changes to these locations throughout the workday.
6. Each crew shall have a planned worksheet at all times, except in the case of emergency work.
7. The Contractor's daily association with their crews and customers will allow planned outages and refusals to be worked on a progressive basis. A written list of such areas that have not been worked, including reasons, shall be supplied to AEP Forestry personnel. Undocumented skips may be worked at the Contractor's expense.
8. Contractor's work shall be inspected on an ongoing basis. When an assigned task is complete, the Contractor must notify AEP Forestry for final inspection.
9. The Contractor will notify AEP of any hazardous conditions found during the performance of work under this contract. This is to include danger trees, soil erosion, and any attachment to AEP's facilities,

deteriorated, damaged or broken facilities and any other abnormal conditions.

F. Public Relations

Public relations are important to AEP. Proper notification can eliminate most property owner issues before they arise. Advanced notification provides the property owner/resident with an opportunity to voice concerns.

1. Where required, an attempt will be made to contact property owners through personal notification, door hangers, news releases, letters, etc. AEP will attempt to contact an absentee landowner only if the landowner provides AEP with a method to contact the landowner.
2. During emergency work, Contractor will attempt to notify the property owner/resident of the crew's arrival. Discretion should be used during late night or early morning work. If no personal contact is made, a door card may be left to explain the emergency work performed.
3. Contractor will document all locations where door cards were left, including address and date. A monitored local or toll-free telephone number to reach the contractor should be on each card.

G. Refusals

1. A "refusal" is considered any property owner/resident refusing to allow or permit the contractor to manage vegetation as specified within the scope of, and according to, these guidelines and all applicable specifications, permits and easements.
2. The contractor shall fill out a refusal/complaint form with all pertinent information for all refusals.
3. If the contractor is unable to resolve the refusal within one week, the refusal shall be turned over to the appropriate AEP Forester.
4. Undocumented refusals or those left unaddressed for more than one week by the contractor may be worked at the Contractor's expense.

H. Damage Claims and Complaints

1. The contractor shall be responsible for all damage claims and complaints due to its negligence. AEP shall be notified immediately of all claims and complaints.
2. An on-site investigation with the resident/ property owner shall be made as soon as possible. This meeting, or telephone arrangements for the investigation, shall be made within twenty-four (24) hours of receipt of the complaint. AEP's representative may accompany the Contractor during this initial investigation.
3. All valid claims resulting from the Contractor's negligence shall be settled within thirty (30) days by the Contractor, or the Contractor shall provide evidence he is trying to reach a reasonable settlement.
4. The Contractor shall keep AEP informed of the status of all complaints. When a settlement is reached, a written release for both AEP and the Contractor shall be obtained from the property owner/resident.
5. If a settlement cannot be reached, the Contractor shall confirm in writing to AEP the final settlement offer and briefly summarize events pertaining to the offer.
6. After thirty (30) days, if a Contractor fails to resolve a claim, does not continue attempts to resolve the claim or keep AEP fully informed, AEP may settle the claim and bill the Contractor.
7. Costs to restore outages or repair the Owner's facilities due to negligence may be billed to Contractor as determined by AEP Forestry.

II. Performance Guidelines

A. Removals

1. Stumps shall be flush cut (three (3) inch maximum height) and treated with an approved herbicide, unless designated otherwise by AEP Forestry.
2. Tree removal shall be completed in one operation. If this is not practical, hazardous conditions shall not be left while the work is not actively in progress. Trees shall be removed in a manner to protect yards, fences, houses, electric lines and other facilities.

3. Targets for removal are:

- All trees with the potential of growing into the conductors.
- Trees where adequate clearance cannot be obtained using proper pruning practices.
- Trees that will take less than three times the amount of time to remove as they would take to prune.
- Trees within five (5) feet of poles.
- Mature trees where more than 50% of the crown must be removed to obtain clearance.
- Young vigorously growing trees where more than 66% of the crown must be removed to obtain clearance.
- Palm species.

4. Trees that may be less suitable candidates for removal are:

- Those that would take more than three times longer to remove than to prune for proper clearance and at least 50% of the crown would be left intact.
- Species that will not reach a height that would affect the conductors.
- Slow-growing tree species.

5. Deciduous stumps shall be flush cut (three (3) in. maximum height) and shall be treated with an appropriate herbicide to prevent re-growth unless the situation prevents application according to label instructions, there is a documented customer refusal or an AEP forester directs otherwise.

6. At the request of the property owner/resident diseased, dying, or dead trees which could threaten AEP facilities will be "made safe", allowing for removal by the customer or private arborist. Generally, all brush and wood generated by this activity should be left on site, unless otherwise directed by AEP Forestry.

B. Pruning

1. Contractor practices should be compliance with all applicable industry standards (i.e., ANSI, OSHA, NESC) whenever practical unless the use of such standards increases the risk of injury or property damage.
2. Pruning shall be done in a manner that protects current tree health and with regard for future growth and development.
3. Pruning shall provide at least the minimum specified clearance from electrical conductors as set forth in Tables I and II.

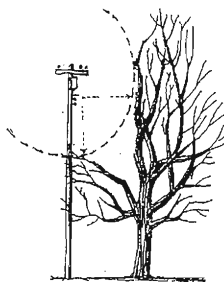
4. Reasonable care should be exercised to prevent the spreading of insects or diseases from one tree to another.
5. Portions of wild cherry, black walnut and other vegetation toxic to livestock (i.e., wilted leaf material) that has been pruned, cut or damaged by the contractor's activities, should be removed from active pasture areas accessible to livestock, unless agreed to by the property owner.

C. Clearances - Distribution

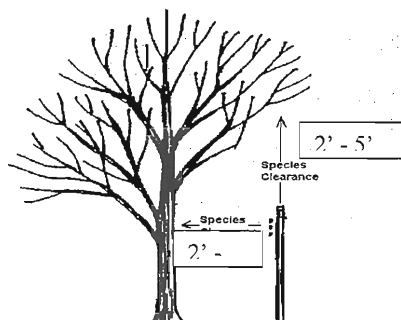
Variances to this recommendation may be necessary and applied due to specific operating company guidelines or specific restrictions in permits and/ or easements.

Minimum clearance for distribution system lines is that distance that will prevent re-growth into any AEP conductors for a minimum of three (3) years (see Table I in the appendix). The species, site, limb and conductor sag and sway during windy conditions and the effect of electrical load should all be considered when determining the clearance requirement.

1. Primary Conductors- Limbs should be pruned for a minimum of three (3) years clearance. Overhanging limbs should be removed. Top of tree should be directionally pruned unless prior arrangements have been made with the appropriate AEP Forestry representative.



2. Open Wire Secondary Conductors- Limbs should be pruned for two (2) to five (5) feet of clearance without removing overhanging branches unless otherwise specified by an AEP Forestry representative.



3. Twisted, Cabled Secondary, Service Drops or Street Light Conductors -

Trees near twisted or cabled secondary service drops and street light wires will not be pruned unless limbs are applying pressure to the line. Do not prune for street light illumination except under the specific direction of the appropriate AEP Forestry representative.

4. Span Guy Wires – Trees near span guys should only be pruned of heavy limbs applying pressure on the wires.

5. Poles and down guys - All poles and down guys will be cleared of all volunteer trees, brush, and slash to obtain a minimum of a five (5) foot radius of clearance around the pole or guy.

6. Vines - Should be cut, but not removed from AEP or other facilities, and treated with an herbicide to prevent re-growth. Pulling / removing vines may damage equipment and endanger the employee.

D. Clearances - Transmission

The ultimate goal of vegetation maintenance is to provide for the safe, reliable operation of the AEP transmission system. When performing maintenance, the objective for locations on spans with less than 100' vertical clearance at maximum sag from conductor to ground is removal of all woody-stemmed vegetation to the appropriate width, leaving the cleared area of the right of way populated with grasses and herbaceous growth. Under certain circumstances (unique topographic and/or environmentally sensitive conditions), AEP may allow compatible, low-growing species to remain in the right of way. In maintained areas (mowed yards, lawns and public areas), trees deemed compatible with safe operation of the line may remain, although AEP strongly discourages this practice. Compatible species will be limited to those that grow no

more than 15' tall or actively maintained trees that could be considered a crop such as in nurseries or orchards.

Clearance Table Guidelines

Right of Way No Restrictions	Right of Way with Restrictions
< 100' Vertical Clearance between Conductors at Maximum Sag and Ground	< 100' Vertical Clearance between Conductors at Maximum Sag and Ground
1) Remove All Woody Stemmed Vegetation *	1) Trim or Remove Vegetation to Meet Column C *
2) Do Not Allow Vegetation Closer than Column E	2) Do Not Allow Vegetation Closer than Column E
3) Trigger Distance to Schedule Maintenance per Column D	3) Trigger Distance to Schedule Maintenance per Column D
> 100' Vertical Clearance between Conductors at Maximum Sag and Ground	> 100' Vertical Clearance between Conductors at Maximum Sag and Ground
1) Trim or Remove Vegetation to meet Column B *	1) Trim or Remove Vegetation to Meet Column C *
2) Do Not Allow Vegetation Closer than Column E	2) Do Not Allow Vegetation Closer than Column E
3) Trigger Distance to Schedule Maintenance per Column D	3) Trigger Distance to Schedule Maintenance per Column D

* Upon Completion

1. Restrictions - When removal of all woody-stemmed vegetation is not achievable (i.e. there are restrictions), AEP will endeavor to cut or trim so that upon completion of the work no vegetation will be closer to conductors at maximum sag than the distances outlined in -Columns A and C. Distances are based on completed work meeting or exceeding the minimum approach distances to energized conductors for persons *other than qualified* line-clearance arborists and qualified line-clearance arborist trainees (Columns A and C).

2. Minimum Approach - Additional maintenance should be scheduled when vegetation will encroach within the minimum approach distances from energized conductors for *qualified* line-clearance arborists and qualified line-clearance arborist trainees (Columns A and D). In areas where easement or other legal agreements, or regulations restrict vegetation management practices, the maximum allowable amount of vegetation will be removed or otherwise controlled. AEP will annually monitor locations where these clearances cannot be achieved. The monitoring will determine whether maintenance that is more frequent may be required in order to assure the safe, reliable operation of the circuit.

E. Hangers and Clean Up

1. All hangers should be removed from the pruned tree before leaving the job site.

2. Work sites shall be left in a neat and orderly condition.
3. A minimum amount of clean up work should be performed, especially when a property owner requests a tree be removed. Unless otherwise designated by AEP Forestry, wood shall not be cut up or hauled away. Where designated by AEP Forestry, chipping the brush, cutting wood into lengths that can be handled and raking the site is the maximum clean up that should be performed.
4. All streams and/or drainage ditches shall be kept free of any limbs or woody debris cut by the contractor. Any cut debris that inadvertently falls into such an area, or any debris left in an area that may be prone to regular flooding, shall be moved/removed in an appropriate manner (chipped, stacked on top of ditch bank, etc.)

F. Clearing and Re-clearing

1. AEP Forestry will provide the width of the right-of-way.
2. All woody plants that have the potential to grow into the lines should be controlled, either by removal, herbicide treatment or a combination of both. On distribution lines and areas approved by Transmission Forestry on transmission lines those woody plants within the right-of-way that at mature size normally would not threaten lines or interfere with access to AEP's facilities, should be left undisturbed in the right-of-way whenever possible. Variances to this recommendation may be applied due to specific operating company guidelines.
3. During scheduled maintenance operations, prune or remove any vegetation within the rights-of-way of station entrances or exits that may affect the safe operation of AEP facilities, including station fences and equipment.
4. During scheduled maintenance operations, any vegetation adjacent to station facilities that may affect the safe operation of those facilities should be brought to the attention of the appropriate AEP personnel.
5. Trees, brush, and existing stumps within the right-of-way shall be cut as close to the ground as practicable, but not to exceed three (3) inches in height above the ground line. Where possible, the cut shall be parallel to the slope and promptly treated with an approved herbicide, unless otherwise directed by AEP Forestry.
6. Trees shall be felled to avoid damage to crops, fences and other facilities. Any trees felled into crops, ditches, streams, roads or

across fences shall be promptly removed. No trees shall be felled in such a manner as to endanger AEP's facilities or the property of third parties, or hinder access along the right-of-way.

7. Tree, brush and slash shall be lopped as designated by AEP Forestry.
8. Danger trees are identified and addressed / worked at the discretion of the individual operating companies or regions. Consideration for danger tree removal shall be made for those trees that are an imminent hazard or threat to AEP facilities. Danger trees may include, but are not limited to, trees that have severe lean or sweep, are dead, or have visible defect or damage. When cut, danger trees shall be cut as low as possible.
8. Stumps of trees growing in fences may be cut at fence post height, as approved by AEP Forestry.
9. Logs may be left in tree lengths or as designated by AEP Forestry. If so designated, the merchantable value of logs shall be preserved as much as practical.
10. In remote areas, brush and logs may be piled at the edge of the right-of-way for wildlife habitat.
11. Brush should not be left in managed agricultural areas or other maintained areas unless designated by AEP Forestry.

G. Herbicide Applications

1. All woody plants that have the potential of growing into the lines, should be controlled. Those woody plants within the right-of-way that at mature size normally would not threaten lines or interfere with access to AEP's facilities should be left untreated in the right-of-way whenever practical.
2. Contractors are required to maintain accurate and up to date records of all herbicide applications made and are required to abide by all Federal, State, and local laws concerning licensing, record keeping, and product handling.
3. Contractors shall attain 100% coverage and 95% control of treated vegetation.
4. AEP Forestry will make vegetation management prescriptions in consultation with contractors.

5. Where required, landowners should be notified before any herbicide treatments occur. There are several acceptable methods of notification such as personal contact, letter, or door hanger.
6. Managers of public rights-of-way involved in the treatment area shall be notified, where appropriate.
7. Contractor shall be responsible for training of herbicide applicators.
8. Unless specifically prohibited by property owners or AEP Forestry, stumps should be treated with an appropriate herbicide treatment.

H. Tree Growth Regulator Application

1. Trees designated for tree growth regulation shall be treated with an approved tree growth regulator (TGR) in accordance with label instructions.
2. All trees shall be inspected by the Contractor for health and vigor prior to treatment. Trees found in an excessive state of decline shall not be treated unless directed by AEP Forestry.
3. As designated by AEP Forestry, landowners should be notified before any TGR treatments occur. There are several acceptable methods of notification such as personal contact, letter, or door hanger.

Goals, Procedures & Guidelines for Distribution and Transmission Line Clearance

APPENDIX I

Distribution Line Clearance Guidelines

These growth rates and clearance distances are guidelines for the minimum clearances required. These distances are not static and should serve as **minimum clearance** requirements unless designated otherwise by AEP Forestry. Good soils and high moisture may cause many species to grow faster. These clearance guidelines are not meant as a requirement for all trees on AEP's rights-of-way. It is understood that during maintenance intervals, trees may encroach into these minimum clearance zones. The guidelines are meant to be used a guide for trimming those trees currently being maintained.

MINIMUM CLEARANCE FROM CONDUCTORS

- **Species with Fast Re-growth Rates:** Prune for a *minimum* clearance of 20 feet from conductors

Cottonwood	Willow
Poplar species	Ailanthus
Silver maple	Box Elder
Sycamore	

- **Species with Medium Re-growth Rates:** Prune for a *minimum* clearance of 15 feet from conductors

Locust	Hackberry
Red maple species	Hickory
Ornamental pear species	Crabapple
Fruit trees (apple, pear, etc.)	Red oak
Elm species	Ash species
Pine, Spruce & Hemlock species	Mulberry
Sweet gum	Bois d'arc (Osage orange, hedge tree)
Catalpa	

- **Species with Slow Re-growth Rates:** Prune for a *minimum* clearance of 10 feet from conductors

Cedar	
Chinaberry	Persimmon
Magnolia	White oak (round lobes)
Any small variety species	(Redbud, dogwood, etc.)

- **Possible Exceptions:**

- When the entire trunk of a tree falls within the minimum clearance specifications.
- When due to the branching structure of the tree less trimming would lend itself to an overall healthier tree, yet with acceptable clearance.
- Isolated instances approved by AEP Forestry representative.

Goals, Procedures & Guidelines for Distribution and Transmission Line Clearance

APPENDIX II

Transmission Line Clearance Guidelines⁽⁷⁾

Column A Nominal Voltage (kV phase to phase)	Column B ⁽⁵⁾ NERC Clearance 1 (no restrictions) Desired Clearance between Conductor ⁽¹⁾⁽²⁾ and Vegetation	Column C ⁽³⁾⁽⁵⁾ NERC Clearance 1 (with restrictions) Desired Clearance between Conductor ⁽¹⁾ and Vegetation	Column D ⁽³⁾ ANSI Clearance between Conductor ⁽¹⁾ and Vegetation	Column E ⁽⁴⁾ NERC Clearance 2 between Conductor ⁽¹⁾ and Vegetation
765 kV	45'	35' 00"	27' 04"	14' 0"
500 kV	45'	26' 08"	19' 00"	10' 0"
345 kV	30'	20' 05"	13' 02"	7' 6"
230 kV	30'	16' 05"	7' 11"	5' 2"
161 kV	25'	14' 00"	6' 00"	3' 5"
138 kV	25'	13' 02"	5' 02"	2' 11"
88 kV & 115kV	25'	12' 04"	4' 06"	2' 6"
69 kV	25'	10' 09"	3' 09"	2' 6"
46kV, 40kV, 34.5 kV & 23 kV	20'	10' 00"	2' 09"	2' 6"

⁽¹⁾ Conductor at maximum sag condition⁽⁶⁾

⁽²⁾ Desired clearance to maintain reasonable clearing cycles

⁽³⁾ ANSI Z133.1 rev. 10/2000

⁽⁴⁾ IEEE Standard 516-2003, Section 4.2.2.3, Tables 5 and 7, calculated clearances (Clearance 2)

⁽⁵⁾ Application of herbicides will be considered as meeting these guidelines, as long as all treated vegetation meets or exceeds the desired clearance from maximum sag (Table AEP1.2, Columns A and C).

⁽⁶⁾ AEP Guideline for Determining Maximum Conductor Sag and Blowout for Vegetation Management is to be used to adjust the conductor's found field condition to the maximum sag condition taking into account the conductor size, span length, elevation, and current temperature.

⁽⁷⁾ (Columns A, B, C, and D) distances exceed clearances for NERC operationally significant circuits noted in NERC Standard FAC-003-1, which gives clearances (Columns A and E) to be maintained between vegetation and conductors under all rated electrical operating conditions, per IEEE Standard 516-2003 (Guide for Maintenance Methods on Energized Power Lines) and as specified in its Section 4.2.2.3, Minimum Air Insulation Distances without Tools in the Air Gap.

**AMERICAN ELECTRIC POWER
REQUIREMENTS & POSITION DESCRIPTIONS FOR
FORESTRY SUPPORT SERVICES
April 11, 2014**

1.0 DESCRIPTION OF SERVICES & REQUIREMENTS

Contractor shall furnish all necessary supervision, labor, equipment and materials for contract forestry employees to perform duties which include but are not limited to landowner/customer contacts (work planning) for vegetation clearing and herbicide programs, inspection of work areas and vegetation contract crew and forestry program oversight. Contractor shall supply adequate supervision and training, at no additional cost to AEP, to direct and control their employees to insure high productivity and to improve and maintain AEP's image in all contacts with landowners and the public. All Contractor employees shall be neat, clean and appropriately dressed to present a favorable impression to landowners.

Work will be performed as requested by each AEP operating company and/or transmission entity within the operating company.

Contractor shall furnish AEP with a qualified Forestry Inspector, Forestry Work Planner or Utility Forester within thirty (30) days of receipt of a request for same. AEP reserves the right of final approval of all new hires.

Contractors will be expected to keep and retain or transfer work plans to designated AEP operating companies in an electronic format; as shape files that would be compatible with a GIS system as designated by the AEP operating company.

Contractor will provide basic training of all new Forestry positions before starting work on AEP's property. Such basic training will include information such as tree species and growth characteristics, electrical hardware, voltages, types of line construction, utility vegetation management principals, safety, OSHA, ANSI requirements, first aid and CPR etc.

AEP will provide location specific training regarding the Forestry Program in each operating company area.

In designated operating company areas contractor shall provide Forestry employees that are bilingual to clearly communicate with customers and contract vegetation clearing crews.

During the first month of employment, each Contract Forestry employee will be evaluated by AEP to determine if he/she is qualified and capable of performing the required duties. If he/she does not satisfactorily perform, Contractor shall correct the problem or fill the position with a new person within thirty (30) days of receiving written notification of the deficiency. Unsatisfactory performance by Contractor's employee shall constitute a default under this agreement. If Contractor fails to correct such defaults, AEP may immediately terminate this Agreement.

Contractor and AEP's representative will review Contract Forestry employee performance on an annual basis. Retention or advancement of employees will be made with AEP's approval. If the Contractor advances an employee into a position for which AEP does not believe he/she is qualified, AEP will pay for this employee at the lower rate even though the Contractor may compensate the contract employee at a higher rate.

Forestry Inspector, Forestry Work Planner and Contract Utility Foresters are three distinct positions with specific qualifications and responsibilities. There is no guarantee of advancement from a Forestry Inspector to a Utility Forester Senior. Contract Utility Forester positions will only be filled at the request and approval of AEP.

Safety is of utmost importance to AEP and Contractor employees must work in a safe manner, expect others to work safely and provide for the safety of the public. The Contractor is responsible to insure employees comply with all appropriate laws and regulations. A poor safety record will seriously affect the continuance of the contract.

Contractor shall provide a serviceable and presentable vehicle for each employee. As required by specific operating areas Contractor may be required to provide for each vehicle a clear display of the Contractor's name and "Under Contract to American Electric Power".

The Contractor shall supply each employee with appropriate personal protective equipment (PPE) a personal voltage detector and first aid /CPR training. AEP will supply each Contractor employee with an AEP contractor photo identification card. The contractor must return these cards to AEP for any of their employees who are not actively working for AEP.

In designated operating areas AEP will not provide an office for Contract Forestry Inspectors or Forestry Work Planners. However, when necessary, AEP will provide working space for them to use for the preparation of maps and notification forms. Office space will be provided for Contract Utility Foresters.

Contract Forestry Inspectors and Contract Utility Foresters will be required to enter vegetation clearing crew inspections and/ or contract crew audit reports into the AEP CAMPS system thru the AEP web portal.

AEP will supply specialized and location specific equipment such as clipboards, DBH tapes, circuit/line maps, tree marking paint, pens, pencils, etc. Contractor employees should utilize AEP's telephones, copying and fax machines. In designated areas contractor will be required to provide a computer or similar electronic device capable of collecting and recording vegetation work plan data in the field.

Contractor must obtain advanced approval for reimbursement of any expenses: copying, purchased maps, phone calls, materials, tools and equipment, travel expenses, etc. All approved expenses will be reimbursed at actual cost with no mark-up.

2.0 WORK SCHEDULE

AEP shall designate the days and hours to be worked for each contract employee and reserves the right to reschedule the normal working hours with two (2) weeks prior notice. All overtime must be approved in advance by AEP.

In the event of an extended absence (2-weeks or longer or at AEP's request) a substitute Forestry Employee shall be provided at a cost not to exceed the hourly rate of the absentee.

The following days are considered to be Holidays (or the normal work day not worked because of the Holiday) and will not be considered normal work days for Contractor employees: New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving and the following Friday, Christmas Eve and Christmas Day.

3.0 INVOICING

The Contractor will be required to submit a hard copy weekly timesheet(s) to the Owner that accurately details the crew labor personnel and labor classifications, equipment utilized, man-hours, volume of work completed and any materials used. Those documents shall be entered into the Owners data base, and Owner shall arrange the Contractor to perform this task thru a web site link. Owner shall make payment electronically using the invoicing program. Owner will not withhold retention.

AEP will pay for travel time when Contractor's employee is required to work outside of the agreed upon area. If overnight stays are required, these will be reimbursed at actual motel cost (receipt required) and quoted per diem rates for meals. Conservative, mid-priced motels must be used.

4.0 POSITION DESCRIPTIONS

4.1 CONTRACT UTILITY FORESTER POSITION DESCRIPTIONS

1) Contract Utility Forester III:

Qualifications:

1. Degree in Forestry, Arboriculture, or equivalent education, or related utility experience.
2. Valid driver license
3. Knowledge of pesticide use, particularly herbicides.
4. Knowledge of electric utility facilities and hardware
5. Basic familiarity of and ability to learn computer systems.
6. Good verbal and written communication skills.
7. Positive professional attitude and neat professional appearance.
8. Demonstrated ability to work outside in a safe, productive manner in all conditions which include and are not limited to terrain weather and seasonal changes.

Responsibilities:

Patrol electric utility rights of way as assigned for identification of vegetation to meet applicable line clearance specifications or guidelines. Record this work on appropriate forms, maps, documents or other data collection systems. To investigate, recommend, and resolve solutions for property owner and customer concerns as assigned. Assist in the inspection and cost estimate of vegetation line clearance work. Assist in the inspection and auditing of contractor crews performing line clearance work for compliance to applicable clearance guidelines or specifications, accounting classification of the work performed, safety compliance, OSHA / ANSI compliance, overall time reporting accuracy and recommend acceptance or corrective action. Assisting in the inspection and training of work planners. Assist in monitoring all work including herbicide applications for contract compliance. Assist in processing contractor time sheets; operate system forestry computer and record systems. Work in a safe manner; promote good safe work practices for both AEP and contractor employees. Perform all duties in a manner that promotes and maintains good public relations. Assist in storm and emergency service restoration. Assume other duties and responsibilities as assigned.

2) Contract Utility Forester II:

Qualifications:

1. Meet qualifications of a Contract Utility Forester III.
2. One year experience as a Contract Utility Forester III or two years related electric utility experience.
3. Must work toward an appropriate pesticide license and / or ISA certification if requested by owner or if required by law.

Responsibilities:

Perform all the duties of a Contract Utility Forester III. Keep informed of line clearance and work planning provisions. Patrol lines for necessary line clearance and as required record work on maps or other data collection system, make appropriate arrangements with property owners and assign to line clearance contractors, or assign to work planners. Inspect and audit work of line clearance contractors and work planners to assure contract compliance and recommend acceptance or corrective action. Investigate and resolve property owner or customer concerns. Recommend work plans, priorities, work schedules and budgets to meet forestry program goals and assume responsibility of same. Determine line clearance requirements for short and long term plans; provide cost estimates for maintenance activities or new construction. Contact governmental agencies, tree commissions, special interest groups, other utilities, property owners, customers and others to arrange and coordinate right of way maintenance activities. Maintain records and files of all work activities for contractor crews and maintenance activities. Prepare reports on budget, crew production, work cost, work quality and effectiveness. Assume other duties and responsibilities as assigned.

3) Contract Utility Forester I:

Qualifications:

1. Meet qualifications of Contract Utility Forester II.
2. One year experience as a Contract Utility Forester II or three years related electric utility experience.
3. Demonstrated ability in teamwork, leadership, organization, decision-making, problem solving and proficiency at planning, scheduling, directing, and estimating work.
4. Possess a thorough knowledge of right-of-way maintenance or IVM practices.
5. Must possess a herbicide license and ISA certification

Responsibilities:

Perform all the duties of Contract Utility Forester II and III. Train and direct others in pre planning line clearance work activities. Assign and inspect line clearance work, consult with contractor supervision to assure contract compliance and timely job progress. Assist with the development of work plans, priorities, work schedules, budgets and assume responsibility for the accomplishment of same. Assist in guiding and training others involved in the forestry program in proper work practices and procedures. Keep informed in vegetation management practices, procedures and proactively test and develop new tools, techniques and methods. Assume other duties and responsibilities as assigned.

4) Contract Utility Forester Senior:

Qualifications:

1. Meet all qualifications of Contract Utility Forester I.
2. Four years' experience as a Contract Utility Forester I.

Responsibilities:

Capably perform all the duties of Utility Forester at a level that demonstrates a thorough understanding of the position requirements and expectations of AEP Forestry. The employee demonstrates an ability to plan, monitor budgets to spending, and monitor forestry work plans to achieve and complete an operating company's line clearance forestry program specific to the contract employee's area(s) forestry work plan goals, with little guidance from forestry management. Assume other duties and responsibilities as assigned.

4.2 FORESTRY PROGRAM COMPLIANCE INSPECTOR POSITION DESCRIPTION

Qualifications:

1. Degree in Forestry or related field and /or related work experience in utility line clearance.
2. Valid driver's license
3. A familiarity in the operation of and use of computer systems
4. Good verbal and written communication skills
5. Professional attitude and neat appearance
6. Good understanding of electrical utility hardware and the ability to interpret associated electrical line / circuit maps
7. Self-motivated and efficient
8. Demonstrated ability to capably work safely in the field under adverse conditions which include and are not limited to terrain, weather and seasonal changes.

Responsibilities:

The primary responsibility of the Contractor will be the field inspection and review of work locations. This inspection may be necessary to survey vegetation management prior to or for the purpose of reviewing work performed in order to assure compliance to applicable guidelines and / or standards for vegetation clearances and work quality. This work shall require the Contractor to work alone under adverse field conditions. Extensive driving time is required as well as overnight stays. The Contractor will be required to complete inspections on AEP form 33060C1106 or similar document and/ or enter the inspections electronically into the CAMPS database via AEP's web access.

The Contractor may be assigned additional tasks or alternative work which may include but is not limited to inspection of line clearance contractor crews for OSHA and safety compliance, work unit accuracy reporting, accounting accuracy, or other compliance issues. Assistance may be required during major storms or other related duties as assigned.

4.3 FORESTRY WORK PLANNER POSITION DESCRIPTIONS

1) Work Planner C:

Qualifications:

1. Degree in Forestry, Arboriculture, or related field, or related utility experience is desirable.
2. Valid driver's license.
3. A basic familiarity in the operation of and ability to learn computer systems.
4. Good verbal and written communications skills.
5. Professional attitude and neat appearance.
6. Self-motivated and efficient.
7. Demonstrated ability to capably work safely in the field under adverse conditions which include and are not limited to terrain, weather and seasonal changes.

Responsibilities:

As directed; patrol electric utility rights of way and identify vegetation requiring periodic line clearance maintenance to meet applicable specifications or guidelines. Locate property owners and inform them of the work to be performed to provide the required line clearance. Identify and mark vegetation in the field, record this work on applicable forms, documents, maps or other data collection systems. Communicate work to be conducted to tree crews. Assist in inspection and auditing of work in progress and completed work. Under direction apply herbicides or TGR's. Assume other duties and responsibilities as assigned.

2) Work Planner B:

Qualifications:

1. Meet all qualifications of Work planner C
2. Six months experience as a Work planner C or two years related utility line clearance experience.
3. Has a good understanding of electrical facilities and hardware
4. If required by owner or by law obtain appropriate pesticide license.
5. Demonstrates initiative and pro-actively looks for ways to do work cost effectively.
6. Demonstrated ability to work safely and efficiently with minimal supervision
7. Willing to travel and stay away from home overnight.

Responsibilities:

With little or no direct supervision perform all the duties and responsibilities of a Work planner C. Assist in training and mentoring Work planner C personnel. Assist in monitoring the performance of other Work planners. Respond to storm or other emergency situations as directed by AEP. Assist in preparing legally required notification to public agencies, news media etc. Capably investigates customer calls; requests for work, complaints etc. Assume other duties and responsibilities as assigned.

3) Work Planner A:

Qualifications:

1. Meet all qualifications of Work planner B
2. One year's experience as a Work planner B or three years related utility line clearance experience.
3. If required by owner or by law obtain appropriate pesticide license.
4. Consistent work planning accuracy greater than or equal to 95%.

5. Demonstrates initiative and pro-actively looks for ways to do work cost effectively.
6. Demonstrated abilities in teamwork, leadership and problem solving.
7. Willing to travel and stay away from home overnight.

Responsibilities:

With little or no direct supervision perform all the duties and responsibilities of a Work planner B. Train and mentor Work planner B or C personnel. Assist in monitoring the performance of other Work planners. Assume other duties and responsibilities as assigned.

DAVEY RESOURCE GROUP - RATES FOR AEP EAST

CUF/Work Planner Rate Sheet

Labor		Billing Rate			
Labor Description	Labor Code	Labor Rate	ST	RT & 1/2	DT
[Redacted]					

STORM		STORM LOADED RATES		
Labor Description	Labor Code	ST	RH	DT
[Redacted]				

Equipment*				Notes
Equipment Description	Equipment Code	Equipment Rate	Fuel Per Hour	
[Redacted]				

DAVEY RESOURCE GROUP - RATES FOR AEP WEST

CUF/Work Planner Rate Sheet

Labor		Billing Rate			
Labor Description	Labor Code	Labor Rate	ST	RT & 1/2	DT (N/A -SWEPCO Distribution)
[REDACTED]					

STORM		STORM LOADED RATES		
Labor Description	Labor Code	ST	RH	DT (N/A -SWEPCO Distribution)
[REDACTED]				

Equipment*				Notes
Equipment Description	Equipment Code	Equipment Rate	Fuel Per Hour	
[REDACTED]				

Expense		
Expense Description	Expense Code	Expense Rate (\$/unit)
[REDACTED]		