Review of Proposed MOPSC Vegetation Management Rules and Impact on KCP&L

Prepared for
KCP&L
Kansas City, MO

Prepared by
Environmental Consultants, Inc.
520 Business Park Circle
Stoughton, WI 53589

DRAFT August 6, 2007

Appendix A

Table of Contents

EXECUTIVE SUMMARY **1**

INTRODUCTION **1**

REVIEW OF MOPSC PROPOSED RULES **2**

Purpose and scope: 2
(1) Definitions: 4
(2) General provisions 7
(3) Maintenance cycle 13
(4) Technical standards for vegetation management 15
(5) Transmission line vegetation management 20
(6) Training, recordkeeping and reporting 24
(7) Public notice of planned vegetation management 27
(8) Outreach programs 29
(9) Penalties, Fines, Sanctions and/or Ratemaking Disallowances 29
(10) Specific Requirements 31
(11) Variances 34

APPENDIX A **35**

EXECUTIVE SUMMARY

The Missouri Public Service Commission (MOPSC) issued a proposed rule called 4 CSR 240-23.030 Electrical Corporation Vegetation Management Standards and Reporting Requirements. The MOPSC is receiving public comments through August 15, 2007, which is also the date of a public hearing on the rule. This report has been prepared by ECI to help identify costs and benefits of the proposed rule. The expressed purpose of the proposed rule is to ensure public safety and efficient and reliable supply of electric power. Some aspects of the rule would in fact lead to improved reliability, however, the efficient supply of electric power is ignored in the rule. In fact the cost of compliance with the standards as evidenced by the fiscal note published in the Missouri Register is estimated to be over $364 Million in the first year and nearly $288.5 Million per year, thereafter.

Of 23 significant provisions evaluated by ECI, 19 (83 percent) would have no impact on safety, or in one case, result in a potentially detrimental impact. Only six (26 percent) of the provisions evaluated had the potential to improve reliability, and while no provisions appeared to have potential to improve customer relations, 35 percent would likely be detrimental to customer relations. Benefits to reliability, while a likely result of some of the provisions come at a high cost to electric utility customers and would create significant dissatisfaction among property owners as utilities attempt to comply with the provisions that would require large-scale removal of trees from private property. Further, the proposed rule will require vastly more labor to accomplish than is available to perform the scope of work described in the rule. Table 1 summarizes the estimated impacts of the significant provisions evaluated by ECI on safety, reliability, cost and customer relations.

Table 1. Summary of Estimated Impacts of Proposed Significant Provisions

	Rating				
	None	**Low**	**Moderate**	**High**	**Detrimental**
Safety Impact	19	1		2	1
Reliability Impact	16	4		2	
Customer Relations Impact	15				8
Cost Impact	3	3	4	13	

ECI has completed comprehensive assessments of the vegetation management programs of over 150 electric utilities. ECI also co-authored the Utility Specialist Certification Study Guide published by the International Society of Arboriculture to prepare arborists for the utility specialist certification exam. As the leading industry expert in the area of utility vegetation management, ECI also authored the Vegetation Management Manual for the Cooperative Research Network of the National Rural Electric Cooperative Association.

This report presents ECI's review and comments on the Missouri Public Service Commission's proposed rules as they relate to electric utility tree maintenance. Because public safety, cost of electric delivery and reliability of electric power are dominant concerns of these proposed rules and of the utilities that will be subject to these rules, each section of the rules has been evaluated based on that sections estimated impact on safety, cost and reliability, if applicable. Customer relations are also important considerations, and estimated impact on customer relations is also addressed in this report, as applicable.

Alternatives to the proposed rules are suggested for every significant provision in an effort to guide more constructive and beneficial rules for vegetation management within the State of Missouri.

REVIEW OF MOPSC PROPOSED RULES

4 CSR 240-23.030 Electrical Corporation Vegetation Management Standards And Reporting Requirements – July 16, 2007

The Missouri Public Service Commission (MOPSC) prepared proposed regulatory rules regarding vegetation management applicable to electric utility companies within Missouri and under the regulatory authority of the MOPSC. The complete text of the draft rule is contained in Appendix A of this report.

The following summarizes issues and impacts related to each section of the proposed rule. Estimated cost amounts are those that were submitted to the MOPSC in April 2007.

Proposed Rule

Purpose and scope:

This proposed rule sets forth requirements that electrical corporations shall follow in managing vegetation in proximity to an energized conductor in order to ensure public safety and the efficient and reliable supply of electric power. The requirements in the proposed rule provide

the minimum standards for conductor clearances from vegetation to provide safety for the public and utility workers, reasonable service continuity, and fire prevention. Each electrical corporation must have a vegetation management plan and keep appropriate records to ensure that timely trimming is accomplished to keep the designated minimum clearances. These records must be made available to the Commission upon request.

Comment

No electrical utility "ensures" public safety or efficient and reliable electric power. This statement is too absolute to be possible to achieve, and is not practical. Language from the National Electric Safety Code (NESC) has been crafted to address the "practical" implementation of various practices and procedures to provide "safe and economical" electrical facilities and to safeguard persons involved in the construction and maintenance of those facilities. This is far different from the directive to "ensure public safety and the efficient and reliable supply of electric power", with no qualifying references. At best, an electric utility vegetation management program can help maintain a safe, efficient, and reliable electrical transmission and/or distribution system.

Safety Impact

None. Existing standards, codes and regulations (NESC, OSHA regulations, and ANSI), all developed over many years by industry experts, already address safety.

Customer Relations Impact

Detrimental – concern by utilities for potential claims arising from the overly broad requirement to ensure public safety may result in over-trimming and unnecessary removal of trees negatively affecting both urban and rural forest resources.

Cost Impact

High. The overly broad directive to "ensure" public safety invites every manner of claim against utilities associated with any tree that fails and results in some loss if that tree could be construed to fall under the purview of this rule. Cost of claims could be in the hundreds of millions.

- Cost estimate: $1,050,000 annual cost (Contractor insurance cost increases = $750,000; Utility legal expenses = $300,000)

ALTERNATIVE

This rule sets forth requirements that electrical corporations shall follow in managing vegetation in proximity to an energized conductor in order to help ensure public safety and the efficient and reliable supply of electric power. The requirements in this rule provide the minimum standards ~~for conductor clearances from vegetation to provide safety for the public and utility workers, reasonable service continuity, and fire prevention~~to help minimize tree-caused interruptions. Each electrical corporation must have a vegetation management plan and keep appropriate records to ensure that timely ~~trimming~~ vegetation maintenance is accomplished ~~to keep the designated minimum clearances~~. These records must be made available to the Commission upon request.

(1) Definitions:

The following words and terms, when used in this rule, shall have the following meaning unless the context clearly indicates otherwise.

(A) Arboriculture means the cultivation of trees, shrubs and other woody plants.

(B) Agricultural crop means a cash crop which is sold for money.

(C) Border zone means the space from the edge of the wire zone, as defined herein, to the outer boundary of the right of way.

(D) Contractor means a person or entity, other than the Commission, with which electrical corporation contracts to perform work, furnishes information and/or material. This term includes all subcontractors engaged by a contractor to perform any of the obligations required by a contract.

(E) Distribution line means a primary electric voltage line, wire or cable, including supporting structures and appurtenant facilities, which delivers electricity from transformation points on the transmission system to points of connection at a customer's premises that would not be considered a transmission line as set forth in this definition section.

(F) Energized conductor means an electric circuit or equipment through which electricity is flowing or usually flows within the transmission or distribution system.

(G) Electrical corporation means electrical corporation as defined in § 386.020(15), RSMo Cum. Supp. 2006.

(H) Electric utility arborist means a person that has been certified as a Utility Specialist by the International Society of Arboriculture.

(I) Grass means a type of plant with jointed stems, slender flat leaves and spike-like flowers.

(J) Major event means any of the following:

A sustained interruption of electric service resulting from conditions beyond the control of the electrical corporation, which may include, but is not limited to, thunderstorms, tornadoes, hurricanes, heat waves or snow and ice storms, which affect at least 10 percent of the customers in an operating area. Due to an electrical corporation's documentable need to allocate field resources to restore service to affected areas(s) when one

operating area experiences a major event, the major event shall be deemed to extend to those other operating areas of that electrical corporation which are providing assistance to the area(s) affected by the major event. The Commission retains authority to examine the characterization of a major event;

An unscheduled interruption of electric service resulting from an action:

i. Taken by an electrical corporation under the direction of an independent system operator or regional transmission organization;

ii. Taken by the electrical corporation to prevent an uncontrolled or cascading interruption of electric service; or

iii. Taken by the electrical corporation to maintain the adequacy and security of the electric system, including emergency load control, emergency switching and energy conservation procedures, which affects one or more customers;

A sustained interruption occurring during an event which is outside the control of the electrical corporation and is of sufficient intensity to give rise to a state of emergency or disaster being declared by State government.

ALTERNATIVE

3. ~~A sustained interruption occurring during an~~An event, which is outside the control of the electrical corporation and is of sufficient intensity to give rise to a state of emergency or disaster being declared by State government.

(K) Operating Area means a geographical subdivision of each electrical corporation's franchise territory as defined by the electrical corporation. These areas may also be referred to as regions, divisions or districts.

(L) Readily climbable means vegetation having both of the following characteristics:

Low limbs, accessible from the ground and sufficiently close together so that the vegetation can be climbed by a child or average person without using a ladder or other special equipment; and

A main stem or major branch that would support a child or average person either within arms' reach of an uninsulated energized electric line or within such proximity to the electric line that the climber could be injured by direct or indirect contact with the line.

(M) Right-of-way means less than fee interest in property, which gives a public utility a limited right to use land owned by another person or

entity for the purpose of transmitting or distributing electricity. This right is typically memorialized in an easement. This term also includes the parcel of land for which a public utility holds a right-of-way or easement.

(N) Transmission line means an electrical line, wire or cable, (including the supporting structures) and appurtenant facilities which transmits electricity from a generating plant to electric distribution lines. An electric transmission line usually has a rating exceeding 69 kilovolts.

(O) Tree means a perennial woody plant with a main trunk and branches forming a distinct elevated crown at a height exceeding three (3) feet at maturity.

ALTERNATIVE

A tree may be defined as a woody plant which at maturity is 20 ft or more in height, with a single trunk, unbranched for at least several feet above the ground, and having a more or less definite crown.[1]

Or (from the list of references in Section 4)

"Tree" means a woody plant with one main stem at least 12 to 15 feet tall [at maturity], and having a distinct head in most cases.[2]

(P) Vegetation means trees, shrubs and other woody plants.

(Q) Vegetation management means the removal of vegetation or the prevention of vegetative growth, to maintain safe conditions around energized conductor(s) and ensure reliable electric service. Vegetation management consists of biological, chemical, cultural, manual and mechanical methods to control vegetation in order to prevent hazards caused by the encroachment of vegetation on energized conductor(s), and to provide utility access to the conductor.

(R) Volts means nominal voltage levels, measured phase-to-phase.

(S) Wire zone means the land located directly under the widest portion of a transmission line. The wire zone is bounded on each side by a location on the ground that is directly under the outermost transmission wire.

(T) Woody plant means any vascular plant that has a perennial woody

[1] Harlow, W. M. & Harrar, E. S. (1969). *Textbook of dendrology* (5th ed.). New York: McGraw-Hill.
[2] Dirr, Michael A. (1975) *Manual of Woody Landscape Plants: their Identification, Ornamental Characteristics, Culture, Propagation and Uses* (Revised 1977) Champaign, Illinois: Stipes Publishing Company.

stem and supports continued vegetative growth above ground from year to year and includes trees.

(2) General provisions

(A) An electrical corporation shall ensure that vegetation management is conducted in accordance with this rule on energized conductors of 600 volts and higher, whether for distribution or transmission, that the electrical corporation owns, in whole or in part.

(B) Each electrical corporation shall obtain, and shall ensure that its contractors obtain, all required permits and licenses prior to commencement of vegetation management.

Comment

The North American Electric Reliability Corporation (NERC), which is the Electric Reliability Organization designated by the Federal Energy Regulatory Commission (FERC) under the U.S. Energy Policy Act of 2005, has established vegetation management standards applicable to all 200 kV and higher transmission line voltages. These standards also apply to critical lines operating at voltages below 200 kV. As a separate concurrent transmission vegetation management regulatory effort by the MOPSC, there is potential for the two standards to conflict with one another.

The MOPSC draft rule requires utility contractors to obtain permits that are already required by other governmental authorities, and is, therefore, unnecessary. Utility contractors are already required to obtain licenses for vehicles, pesticide use, and business operation, in addition to special permits related to specific projects (including municipal permits and special permissions to perform work from private property owners).

(C) An electrical corporation that utilizes chemical or biological agents in vegetation management shall comply with any laws or regulations governing the use of those biological and chemical agents.

Comment

Other governmental agencies have already established comprehensive laws and regulations related to biological or chemical agents used in utility vegetation management. Establishing a new MOPSC rule for this topic is redundant and therefore likely unnecessary.

Safety Impact	None.
Reliability Impact	None.
Customer Relations Impact	None.
Cost Impact	Low. Extra reporting and record keeping for MOPSC.

- Cost estimate: None submitted

ALTERNATIVE

(A) An electrical corporation shall ensure that vegetation management is conducted in accordance with this rule on energized conductors of 600 volts and higher, whether for distribution or transmission, that the electrical corporation owns, in whole or in part. (Eliminate Part B and C)

(D) Each electrical corporation shall employ a vegetation manager, who is an electric utility arborist, as defined in section 1. The vegetation manager shall be an employee of the electrical corporation, not a contractor. The electrical corporation shall provide the vegetation manager with the authority and the resources to administer all aspects of the electrical corporation's vegetation management program, and the vegetation manager shall ensure that the electrical corporation complies with this rule. The vegetation manager's name and contact information shall be posted on the electrical corporation's web site and shall be included on all notifications provided pursuant to the notice requirements of section 6[7].

Comment

While valuable for utilities to acquire and maintain technical expertise, it is not necessary that the technical experts have overall authority for management of the program or that the technical expert be an employee of the company. This requirement removes flexibility from the utility in the management of operations and is unnecessary. Similar requirements were proposed in development of the NERC Vegetation Management Standards and soundly rejected.

It should also be noted that the requirement that the manager in charge of the program be an International Society of Arboriculture Certified Utility Specialist is limiting. In order to attain Utility Specialist status, an individual must first become a Certified Arborist by passing a 10-domain examination. Eligibility requires a combination of green industry experience and/or a degree in a related field. Another 5-domain examination must be passed to attain Utility Specialist status, which requires documented utility vegetation management experience in order to be eligible to take the exam.

While it is appropriate to ensure that an adequate level of technical expertise exists in a utility vegetation management program, requiring the lead manager to be a certified Utility Specialist may preclude some qualified business managers from assuming this role. Many utilities throughout the U.S. with successful vegetation management programs utilize a manager with a business background in the lead role, and ensure that adequate technical expertise (including Utility Specialist status) exists at subordinate levels.

Safety Impact	None.
Reliability Impact	None.
Customer Relations Impact	None.
Cost Impact	None to High. Limits options for assignment of most effective management resource.

- Cost estimate: None submitted

ALTERNATIVE

(D) Each electrical corporation shall ~~employ a vegetation manager, who is an electric utility arborist, as defined in section 1. The vegetation manager shall be an employee of the electrical corporation, not a contractor. The electrical corporation shall provide the vegetation manager with the authority and the resources to administer all aspects of the electrical corporation's vegetation management program, and the vegetation manager shall ensure that the electrical corporation complies with this rule. The~~ post the vegetation manager's name and contact information ~~shall be posted~~ on the electrical corporation's web site and shall be included on all notifications provided pursuant to the notice requirements of section 6.

(E) Each electrical corporation shall ensure that all contractors hired to perform vegetation management inform its workers of all applicable Federal, State, county, and municipal laws, rules or regulations that apply to the work performed under this rule. The electrical corporation shall also ensure that all contractors comply with each applicable requirement of this rule.

Comment

Existing contract documents currently require contractors to follow all applicable laws and regulations. Beyond contractually requiring contractors to do so, this rule could be extremely burdensome and costly for the utility if the intent is for the utility to document compliance with every applicable rule.

Safety Impact	None.
Reliability Impact	None.
Customer Relations Impact	None.
Cost Impact	Low to moderate, depending on intent.

- Cost estimate: None submitted

ALTERNATIVE

(Eliminate Part E)

(F) An electrical corporation that performs vegetation management at the request of a municipality or government agency, other than vegetation management required under this rule, may require the requesting party to pay any cost above the electrical corporation's cost to perform the vegetation management required by this rule. An electrical corporation shall not perform such additional vegetation management if the additional vegetation management would decrease the reliability or safety of an energized conductor.

Comment	A provision to allow the utilities to pass along the costs of the non-standard maintenance requirements of a municipality to that municipality is reasonable.
Safety Impact	None.
Reliability Impact	None.
Customer Relations Impact	None.
Cost Impact	None. Little if any work is now completed at the request of a municipality that is not necessary line clearance maintenance.

ALTERNATIVE *(Eliminate Part F)*

(G) Upon a written request from a municipality, the Commission may authorize an electrical corporation to temporarily suspend compliance with one or more of the vegetation management requirements of this rule, within the following limits:

1. The suspension of compliance shall apply only to the distribution system, and shall not apply to vegetation management under transmission lines;

2. The suspension of compliance shall apply only to those portions of a distribution system that are located within the municipality, and that do not affect service to any adjacent municipality;

3. The electrical corporation shall not suspend compliance with any requirement if the suspension would result in danger to the public; and

4. If the suspension results in additional costs to the electrical corporation due to lack of tree trimming, the municipality shall reimburse the electrical corporation for these costs.

Comment

Part (G) opens the door for numerous disparate programs that start and end at municipal boundaries, thus adding administrative complexity and confusion to maintenance programs, policies, and procedures associated with vegetation management. Further, the utility must always be able to ascertain which specific aspects of the rule suspended at the request of a municipality may result in danger to the public, and then comply with that portion of the suspended rule. The process is potentially onerous and could prove difficult to interpret.

The proposed provision that municipalities reimburse the utility for costs incurred due to lack of tree trimming associated with the suspension of one or more portions of the proposed rule will promote an adversarial relationship with municipalities regarding how to interpret which costs may be reimbursed as well as whether the cause of incurred costs was “lack of tree trimming”.

Safety Impact	None to detrimental, depending on how danger to the public is interpreted.
Reliability Impact	None.
Customer Relations Impact	None.
Cost Impact	None to moderate, depending on how often suspensions are ordered and what claims may result during or immediately following a suspension.

- Cost estimate: None submitted

ALTERNATIVE | *(Eliminate Part G)*

(H) An electrical corporation may seek recovery in rates of the distribution and transmission portion of vegetation management program costs required under this rule in future rate proceedings. However, the Commission may deny recovery in future rate proceedings of costs an electrical corporation incurs due to a delay in implementing a tree trimming program or costs associated with meeting compliance standards after failure to achieve the standards. Upon a showing of good cause by the electrical corporation for the delay or the failure to meet the compliance standards, the Commission may allow such recovery.

Comment

The excessively high cost to comply with this proposed rule necessarily requires recovery of prudently incurred costs through electric rates. Proposed Part (H) does not provide sufficient assurance that cost of compliance will be recoverable through electric rates.

Safety Impact	None.
Reliability Impact	None.
Customer Relations Impact	None.
Cost Impact	None to high, depending on whether or not recovery of prudently incurred costs are allowed in future rate proceedings.

- Cost estimate: None submitted

ALTERNATIVE |

(H) An electrical corporation may ~~seek recovery in rates of the distribution and transmission portion of~~recover prudently incurred costs for vegetation management ~~program costs~~ required under this rule in future rate proceedings. However, the Commission may deny recovery in future rate proceedings of costs an electrical corporation incurs due to a delay in implementing a tree trimming program or costs associated with meeting compliance standards after failure to achieve the

standards. Upon a showing of good cause by the electrical corporation for the delay or the failure to meet the compliance standards, the Commission may allow such recovery.

(I) Upon an electrical corporation's receiving notice of, or having actual knowledge of, any dead, rotten, or diseased vegetation which overhangs, leans toward, or may fall into an energized conductor or guy, the electrical corporation shall promptly remove or remedy the potential safety concern. If removal of the vegetation requires the electrical corporation to access or cross property for which it does not hold an easement or other legal authorization, the electrical corporation shall take all reasonable steps to obtain any necessary permission from the property owner and remove or remedy the potential safety concern as promptly as possible. In response to a major event, the electrical corporation will only be required to remedy the potentially dangerous condition.

Comment

This broad provision to remove or remedy potential safety concerns associated the "dead, rotten or diseased vegetation, which …may fall into an energized conductor, would include virtually every tall tree within the front and back yards of property owners served by overhead distribution lines. Nearly all trees are "diseased" to one extent or another through benign or minor pathogens or rot or decay that have no relationship to predisposition to failure or imminent threat to electrical safety or reliability. Further, in most cases the utility has limited or no rights to remedy conditions outside of established easements or rights-of-way, without the permission of property owners. Nonetheless, this provision obligates the utility to "take all reasonable steps" to obtain permission to remove or top trees identified as meeting the standard of dead, rotten, or diseased. The public relations impact of this provision will be highly adverse to utilities, especially as they pursue removal of trees that, although "diseased", are of relatively low risk of failure, and do not represent a hazard. Even perfectly healthy trees that "lean toward" lines would need to be removed under this provision.

Potential claims and litigation risk to the utilities and contractors from this provision would be enormous. Any tree that could fall on overhead lines, even if that tree only falls and damages private property or results in personal injury unrelated to power lines, could be construed as occurring as a result of failure by the utility to "take all reasonable steps" to obtain permission to remove such a tree. To protect themselves, utilities would need to diligently document every tree and the action taken to attempt to remove trees that are a "potential safety concern". Even with such documentation, which would be a massive undertaking, the Pandora's box would be open for claims and litigation in anticipation of settlement by utility defendants seeking to avoid expensive discovery and/or trial costs. Cost of compliance with this provision alone will be enormous.

Safety Impact	High. Assumes that many trees that have the potential to fail and damage life or property would be removed.
Reliability Impact	High.
Customer Relations Impact	Detrimental. To avoid claims of negligence, utilities will remove trees that may represent unknown or marginal risk, which will have a detrimental impact on both urban and rural forest resources.
Cost Impact	High. Compliance with this provision will have an enormous impact on cost, even with a narrow interpretation of the proposed requirement; there would be high potential claims costs. Cost drivers will include: Inspection, tree removal, record keeping, insurance premiums, loss of insurance coverage, and adverse customer relations. • Cost estimate: $20,000 initial cost for contract development, $34,650,000 annual costs (1,925 miles per year x $18,000 estimated average cost per mile for inspection/tree removal)
ALTERNATIVE	*(I) Upon an electrical corporation's receiving notice of, or having actual knowledge of, any ~~dead, rotten, or diseased vegetation which overhangs, leans toward, or may fall into an energized conductor or guy~~vegetation conditions that pose a known and imminent threat to the reliable function or safety of electrical facilities, the electrical corporation shall promptly remove or remedy the potential ~~safety concern~~threat. If removal of the vegetation requires the electrical corporation to access or cross property for which it does not hold an easement or other legal authorization, the electrical corporation shall take all reasonable steps to obtain any necessary permission from the property owner and remove or remedy the potential ~~safety concern~~threat to electrical facilities as promptly as possible. ~~In response to a major event, the electrical corporation will only be required to remedy the potentially dangerous condition.~~*

(3) Maintenance cycle

(A) An electrical corporation shall perform a visual inspection at least once every two (2) years of all energized conductors, to determine whether vegetation management is needed. Where vegetation is close enough to pose a threat to its energized conductors, the electrical corporation shall perform vegetation management. The visual inspection may be performed from the ground except in cases where the conductor is not visible from the ground. The electrical corporation shall take into account the height of the vegetation and the distance of the vegetation from the energized conductor, in determining whether vegetation management is needed. Vegetation management performed along a circuit in compliance with this rule shall meet this two (2) year visual inspection requirement.

Comment

This provision creates an obligation to not only inspect the entire system every other year, but based on the inspection, to "perform vegetation management" where vegetation is close enough to pose "a threat" to conductors. Absent a unique definition of threat within the rule, the common definition of "threat" would apply[3] (Webster). The nature of the threat to electrical conductors that would trigger "vegetation management" is not specifically addressed in this section, but one could assume from the purpose of the standard that a threat to safety of the public and utility workers, reasonable service continuity, and fire prevention are the triggers. A narrow reading suggests that the obligation only exists when public or utility worker safety is about to be unreasonably compromised, when service continuity is about to be interrupted, or a fire is about to occur. The maintenance work that would result would be the type that should be done immediately and not the type of maintenance normally considered "preventive" maintenance. Examples of a threat could include a broken limb dangling above conductors, a split tree about to fall on the lines, or a tree branch laying across multiple phases. Maintenance of trees that may become a threat in the future would not be included in this narrow reading.

If, however, the statement "vegetation management performed along a circuit in compliance with this rule shall meet this two (2) year visual inspection requirement" means that any tree that could become a threat within the next two years should be maintained, then this provision is so broad as to require maintenance of nearly every tree within fall distance (30 to 90 feet on each side) of the conductors. The costs and administrative aspects of compliance are enormous and, as discussed in the response to (Section 2, Part I), compliance is not attainable.

Safety Impact	Low to High, depending on how broadly "threat" is interpreted.
Reliability Impact	Low to High, depending on how broadly "threat" is interpreted.
Customer Relations Impact	Low to Detrimental. To comply, utilities may be required to remove trees that may represent unknown or marginal risk, but which could become a "threat" within two (2) years, which would have a detrimental impact on both urban and rural forest resources.
Cost Impact	High. Reduction of maintenance cycle lengths from current four or five-year cycles will dramatically increase costs for similar scope of work and is unnecessary given current clearance standards. Additional scope of work to include removal of all trees that could fall on conductors would add exponential costs.

- Cost estimate: See cost estimate following Section 10, Part B-5.

ALTERNATIVE

(A) An electrical corporation shall perform a visual inspection at least once every two (2) years of all energized conductors, to determine whether vegetation management is needed. Where vegetation is ~~close enough to pose a threat to its energized conductors~~<u>needed</u>, the electrical corporation shall perform vegetation management. ~~The visual inspection may be performed from the ground except in cases where the conductor is not visible from the ground. The electrical corporation shall take into account the height of the vegetation and the distance~~

[3] Threat: "an indication of something impending"
Impending: "to be about to occur"

~~of the vegetation from the energized conductor, in determining whether vegetation management is needed.~~ *Vegetation management performed along a circuit in compliance with this rule shall meet this two (2) year visual inspection requirement.*

(B) In addition to the maintenance required in subsection (A) above, if an electrical corporation becomes aware either through notification or during the inspections required under subsection (A) above or at any other time, of any vegetation close enough to pose a threat to its energized conductor, which is likely to affect reliability or safety prior to the next required vegetation management, the electrical corporation shall ensure that necessary vegetation management is promptly performed as required under section 4.

Comment

This paragraph indicates that threat should be interpreted as "likely to affect reliability or safety prior to the next required vegetation management". In this case, two judgments are required. First the probability (likelihood) must be established, and second, the potential for a condition to affect reliability or safety must be assessed. If it were not likely for an event to occur, no action would be necessary, or if the condition will not result in an electrical interruption or an unsafe (electrical) circumstance, no action would be necessary. Currently, a utility arborist makes these sorts of judgments in response to inquiries made by customers about the need for tree maintenance on their property, so this provision could be interpreted as merely a reflection of current practices.

Note, in this proposed Part B, there could apparently be a "threat" to energized conductors that is unlikely to affect reliability or safety.

Safety Impact	None. Utilities already act on imminent threats to safety.
Reliability Impact	None. Utilities already act on imminent threats to reliability.
Customer Relations Impact	None. Part of current programs.
Cost Impact	None. Part of current programs.

(4) Technical standards for vegetation management

(A) Each electrical corporation shall ensure that vegetation management conducted on its energized conductors is performed in accordance with the standards, guidelines and procedures set forth in this rule, which includes to the extent not otherwise inconsistent with this rule, the following publications:

Pruning Trees Near Electric Utility Lines, by Dr. Alex L. Shigo. This publication may be available from Shigo and Tree Associates, P.O. Box 769, Durham, New Hampshire 03824;

Part 1 of the document entitled Tree, Shrub, and Other Woody Plant Maintenance-Standard Practices. This document, also known as ANSI A300, is published by the American National Standards Institute;

Best Management Practices, Utility Pruning of Trees, 2004. This title is published by the International Society of Arboriculture;

Environmental Stewardship Strategy for Electric Utility Rights-of-Way, (2002). This title is published by the Edison Electric Institute Vegetation Management Task Force;

Pruning, Trimming, Repairing, Maintaining, and Removing Trees, and Cutting Brush - Safety Requirements, 1994. This document, also known as ANSI Z133.1, is published by the American National Standards Institute;

Native Trees, Shrubs And Vines For Urban And Rural America: A Planting Design Manual for Environmental Designers, by Hightshoe, G.L., 1987, is published by John Wiley and Sons;

Manual of woody landscape plants 5th Ed., by Michael A. Dirr. Stipes Publishing, LLC; 5th edition (August, 1998);

Hortus Third: A concise dictionary of plants cultivated in the United States and Canada, by L.H. Bailey Hortorium, 1976; and

National Electric Safety Code as referred to in 4 CSR 240-18.

(B) Where multiple standards, guidelines and procedures listed at subsection (A) above would apply or conflict, the vegetation manager, or his or her designee, shall select the most appropriate standard, guideline or procedure.

Comment

Some of the documents listed are “standards, guidelines or procedures”, but others are merely industry references or texts about trees and should, therefore, not be construed to be standards, guidelines, or procedures. ANSI standards have met the requirements for due process, consensus, including substantial agreement by the members of the ANSI committee. Likewise, the National Electric Safety Code is a product of a deliberate, structured method by industry experts. Missouri utilities are already required to comply with the National Electric Safety Code. A provision that suggests that that the vegetation manger select that most appropriate standard, guideline or procedure conflicts with the existing requirement to comply with the National Electric Safety Code.

Safety Impact	None.
Reliability Impact	None.
Customer Relations Impact	None.

Cost Impact | None.

ALTERNATIVE |

(A) Each electrical corporation shall ensure that vegetation management conducted on its energized conductors is performed in accordance ~~with the standards, guidelines and procedures set forth in this rule, which includes to the extent not otherwise inconsistent with this rule, the following publications:~~applicable American National Standard Institute standards, ANSI Z133.1-2006 and ANSI A300-2001 and their successors.

(A) Eliminate list of references.

(B) Eliminate B as no longer applicable after change in A.

(C) Each electrical corporation shall develop its own vegetation management standards, guidelines and procedures, which shall be consistent with this rule. In developing these standards, guidelines and procedures, an electrical corporation shall prioritize its vegetation management based upon:

1. The extent of the potential for vegetation to interfere with the energized conductor;

2. The voltage of the affected energized conductor; and the relative importance of the affected energized conductor in maintaining safety and reliability.

Comment

The provision directing each utility to develop its own vegetation management standards, guidelines and procedures that prioritized the potential for vegetation to "interfere" with energized conductors is consistent with past industry interpretation and compliance with NESC section 218. However, this section is not consistent with the other requirements in this proposed rule to avoid threats to energized conductors or to ensure public safety and the efficient and reliable supply of electric power.

(D) Each electrical corporation shall file a copy of its vegetation management standards, guidelines and procedures at the Commission by January 1, 2008, with verification by affidavit of an officer who has knowledge of the matters stated therein. If an electrical corporation makes a change in its vegetation management standards, guidelines or procedures, it shall file a copy of the change at the Commission no later than 30 days prior to implementing the change, with verification by affidavit of an officer who has knowledge of the matters stated therein.

(E) Each electrical corporation's vegetation management standards, guidelines and procedures shall cover, at a minimum, all of the following activities:

1. Tree pruning and removal;

2. Vegetation management around poles, substations and energized conductors;

3. Manual, mechanical, or chemical vegetation management along rights-of-way;

4. Inspection of areas where vegetation management is performed, both before and after the vegetation management;

5. Research and development of improved vegetation management; and

6. Public education.

(F) Among the factors the electrical corporation shall consider in determining the extent of vegetation management to be performed at a particular site are:

1. The rate at which each species of vegetation is likely to grow back;

2. The voltage of the energized conductor, with higher voltages requiring larger clearances, including but not limited to:

a. location,

b. configuration, and

c. sag of conductors at elevated temperatures and under wind and ice loading, and growth habit, strength, and health of vegetation growing adjacent to the conductor with the combined displacement of the vegetation, supporting structures, and conductors under adverse weather or routine wind conditions;

3. The potential movement of the energized conductor during various weather conditions;

4. The potential movement of trees or other vegetation during various weather conditions; and

5. The electrical corporation's legal rights to access the area where vegetation management is to be performed.

Comment

These items to be included or addressed within utility standards, procedures, and guidelines are generally consistent with current utility operating procedures guidelines and specifications. Inclusion of these items in a plan submitted to MOPSC is reasonable.

(G) The electrical corporation shall remove all trimmings and cut vegetation resulting from vegetation management that are part of the electrical corporation's regular maintenance cycle, within five business days after the vegetation was cut, except if:

1. The electrical corporation obtains consent from the owner of the property upon which the trimmings or cut vegetation are located to leave the trimmings or cut vegetation; or

2. The vegetation management is performed as a direct result of a major event, in which case the electrical corporation shall remove the trimmings and cut vegetation that was cut or trimmed as part of its vegetation management activities after the conclusion of the major event.

Comment

In general, tree branches are currently removed from properties where tree maintenance takes place. However, there are locations (e.g., rural areas) where pruning debris, such as that generated by mechanical pruning operations, is left on site. Additionally, larger diameter branches and other wood that cannot be chipped is typically left on site, which many customers gladly claim as firewood.

Tree debris resulting from storm damage and as part of a major event restoration is generally not removed. Typically, utilities do not remove debris following storms because utilities do not own the trees that are damaged and have no responsibility for maintenance of these private property trees, even if some of them fall onto a utility's facilities and must be cut to restore service. To provide a tree debris pickup and disposal service following storms is prohibitively costly and involves an almost unlimited scope as it becomes nearly impossible to distinguish trees touched during a storm by utility crews from thousands of other trees damaged during storms. Cost of tree debris disposal following major storms can frequently cost millions of dollars, even within a single city. Assistance is often available through State or Federal emergency funds, depending on the magnitude of the disaster. As proposed, the rule would not only shift this storm clean-up cost to utilities, but also leave uncertain the potential to recover this enormous cost, absent the suggested changes to Section 2, Part H.

This rule makes utilities accountable for debris that is not their responsibility. It also severely limits disposal options that are acceptable to the public and that can result in cost savings for utilities. Additionally, enforcement of Part G-2 would be highly subjective.

Safety Impact	None.
Reliability Impact	None.
Customer Relations Impact	Low to detrimental. Customer frustration after storms would likely be significant as debris sites for weeks before contractors could be available to dispose of logs and brush.
Cost Impact	High.

- Cost estimate: $10,000 initial cost of contract development, $3,000,000 annual costs for removal (Assumes only 100,000 customers affected per year at 5 cubic yards per customer and $6.00 per cubic yard for pickup and disposal).

ALTERNATIVE

(G) The electrical corporation shall remove all trimmings and cut vegetation resulting from vegetation management that are part of the electrical corporation's regular maintenance cycle, within five business days after the vegetation was cut, except if:

1. The electrical corporation obtains consent from the owner of the property upon which the trimmings or cut vegetation are located to leave the trimmings or cut vegetation; or

2. Vegetation was cut in rural or wooded settings; or

~~2~~3. The vegetation management is performed as a direct result of a major event, in which case the electrical corporation shall not remove the trimmings and cut vegetation that was cut or trimmed as part of its vegetation management activities after the conclusion of the major event.

(5) Transmission line vegetation management

(A) In addition to the other requirements of this rule, transmission lines, as defined at section 1, are subject to the requirements in this section.

(B) In addition to meeting the other requirements in this section, each electrical corporation shall ensure that the following requirements for transmission lines are met:

1. Clearing under and over transmission lines shall be wide enough so that no vegetation or parts of vegetation will grow or fall into the transmission lines prior to the next scheduled vegetation management cycle;

2. An electrical corporation shall not allow any vegetation that grows taller than 15 feet at maturity to grow anywhere within a transmission line right-of-way;

3. Landowners and political subdivisions may request the right to allow woody plants that naturally mature above three (3) feet tall to grow in the wire zone and/or border zone. The electrical corporation's vegetation manager or his/her designee will be responsible for determining if these woody plants are permissible;

4. The electrical corporation shall not allow any woody plant species that naturally matures above 15 feet to grow in the border zone;

5. Grass vegetation and non-woody agricultural crops, not exceeding 12 feet in height at maturity, shall be permitted to grow anywhere in the right-of-way;

6. Where an electrical corporation has cleared a right-of-way of vegetation and bare soil is exposed, the electrical corporation shall comply with the soil erosion requirements of the applicable soil conservation district in order to prevent soil erosion;

7. To the extent that any plant species identified by the Missouri Department of Conservation as invasive and non-indigenous to Missouri poses a hazard to electrical transmission conductors, the electrical corporation shall make reasonable efforts to eliminate the species from the entire right of way. To do so, the electrical corporation shall use the best integrated vegetation management practices available and practical; and

8. In each electrical corporation's March billing cycle for customers in which vegetation management is scheduled that year, or two months prior to the commencement of vegetation management on a particular property, whichever is earlier, each electrical corporation shall notify owners of land upon which the electrical corporation holds a right-of-way of the requirements in this subsection, through a separate direct mailing.

(C) For the purposes of this section, the mature height of woody and non-woody agricultural crops shall be determined in accordance with the publications incorporated in this rule in section 4(A).

(D) Each year, before June 1, each electrical corporation shall develop a schedule for transmission line vegetation management. The schedule shall:

1. List the transmission lines planned for vegetation management for the next four years;

2. Ensure that transmission line vegetation management is performed prior to vegetation becoming a threat to safety or service reliability; and

3. Be distributed to municipalities served by, or whose residents are served by, or through, transmission lines of the electrical corporation or those with such lines located within the boundaries of the municipality.

Comment

NERC has established requirements for vegetation management on transmission rights-of-way that have been approved by FERC and which were developed with broad constituency input. Development of state regulations, as currently proposed would result in conflicting requirements.

The proposed requirement to provide fall clearance for all trees on all transmission voltages, with out exception, is nearly impossible given the normal easement provisions of typical utilities. Transmission systems were not designed, particularly at lower operation voltages, to eliminate the risk that trees could fall on conductors from outside the right-of-way or easement.

Depending on topography (deep valleys), structure height, or location of trees relative to structures, low-growing and tall-growing trees may be allowed to grow below conductors without any potential for interference with the lines. This rule would require removal of trees from certain right-of-way locations for no rational purpose.

Safety Impact	None.
Reliability Impact	Low.
Customer Relations Impact	Detrimental. This rule will result in significant increases in tree removal on or adjacent transmission ROW including unnecessary removal of trees negatively affecting both urban and rural forest resources.
Cost Impact	High. Achieving removal of any tree within the fall distance (generally outside of existing right-of-way/easements) of transmission lines over 50 kV will be extraordinarily costly.

- Cost estimate: $13,700,000 initial costs to clear existing rights-of-way. Assumes transmission right-of-way maintenance returns to current levels after this initial cost to clear all vegetation on the right-of-way. Removal of trees outside the right-of-way was not estimated.

ALTERNATIVE

(5) Delete all of Section 5 and replace with:

(5) Electrical corporations what operate transmission lines above 50,000 volts but under 200,000 volts shall implement standards for those lines that mirror the following industry requirements developed by the North American Electric Reliability Corporation (NERC).

"The Transmission Owner shall prepare, and keep current, a formal transmission vegetation management program (TVMP). The TVMP shall include the Transmission Owner's objectives, practices, approved procedures, and work specifications[4].

[4] ANSI A300, Tree Care Operations – Tree, Shrub, and Other Woody Plant Maintenance – Standard Practices, while not a requirement of this standard, is considered to be an industry best practice.

The TVMP shall define a schedule for and the type (aerial, ground) of ROW vegetation inspections. This schedule should be flexible enough to adjust for changing conditions. The inspection schedule shall be based on the anticipated growth of vegetation and any other environmental or operational factors that could impact the relationship of vegetation to the Transmission Owner's transmission lines.

The Transmission Owner, in the TVMP, shall identify and document clearances between vegetation and any overhead, ungrounded supply conductors, taking into consideration transmission line voltage, the effects of ambient temperature on conductor sag under maximum design loading, and the effects of wind velocities on conductor sway.

Specifically, the Transmission Owner shall establish clearances to be achieved at the time of vegetation management work identified herein as Clearance 1, and shall also establish and maintain a set of clearances identified herein as Clearance 2 to prevent flashover between vegetation and overhead ungrounded supply conductors.

Clearance 1 — The Transmission Owner shall determine and document appropriate clearance distances to be achieved at the time of transmission vegetation management work based upon local conditions and the expected time frame in which the Transmission Owner plans to return for future vegetation management work. Local conditions may include, but are not limited to: operating voltage, appropriate vegetation management techniques, fire risk, reasonably anticipated tree and conductor movement, species types and growth rates, species failure characteristics, local climate and rainfall patterns, line terrain and elevation, location of the vegetation within the span, and worker approach distance requirements. Clearance 1 distances shall be greater than those defined by Clearance 2 below.

Clearance 2 — The Transmission Owner shall determine and document specific radial clearances to be maintained between vegetation and conductors under all rated electrical operating conditions. These minimum clearance distances are necessary to prevent flashover between vegetation and conductors and will vary due to such factors as altitude and operating voltage. These Transmission Owner-specific minimum clearance distances shall be no less than those set forth in the Institute of Electrical and Electronics Engineers (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.

Where transmission system transient overvoltage factors are not known, clearances shall be derived from Table 5, IEEE 516-2003, phase-to-ground distances, with appropriate altitude correction factors applied.

Where transmission system transient overvoltage factors are known, clearances shall be derived from Table 7, IEEE 516-2003, phase-to-phase voltages, with appropriate altitude correction factors applied.

All personnel directly involved in the design and implementation of the TVMP shall hold appropriate qualifications and training, as defined by the Transmission Owner, to perform their duties.

Each Transmission Owner shall develop mitigation measures to achieve sufficient clearances for the protection of the transmission facilities when it identifies locations on the ROW where the

Transmission Owner is restricted from attaining the clearances specified in Requirement 1.2.1.
Each Transmission Owner shall establish and document a process for the immediate communication of vegetation conditions that present an imminent threat of a transmission line outage. This is so that action (temporary reduction in line rating, switching line out of service, etc.) may be taken until the threat is relieved.

The Transmission Owner shall create and implement an annual plan for vegetation management work to ensure the reliability of the system. The plan shall describe the methods used, such as manual clearing, mechanical clearing, herbicide treatment, or other actions. The plan should be flexible enough to adjust to changing conditions, taking into consideration anticipated growth of vegetation and all other environmental factors that may have an impact on the reliability of the transmission systems. Adjustments to the plan shall be documented as they occur. The plan should take into consideration the time required to obtain permissions or permits from landowners or regulatory authorities. Each Transmission Owner shall have systems and procedures for documenting and tracking the planned vegetation management work and ensuring that the vegetation management work was completed according to work specifications."

(6) Training, recordkeeping and reporting

(A) Each electrical corporation shall ensure that all persons who perform vegetation management for the electrical corporation, whether employees or contractors, are trained in the proper care of trees and other woody plants, are knowledgeable regarding safety practices and line clearance techniques, and have demonstrated the ability to perform vegetation management safely.

Comment

Many workers who perform vegetation management work are trained in the proper care of trees (although not necessarily "other woody plants). Others workers are trained in specific job functions that support maintenance activities, such as ground workers who chip bush, haul logs, clean up work sites, etc. but do are not yet trained in proper care of trees,

Safety Impact	None. OSHA and ANSI standards already regulate worker safety.
Reliability Impact	None.
Customer Relations Impact	None.
Cost Impact	Moderate. The requirement that all persons who perform vegetation management be trained in the proper care of trees is unnecessary.

- Cost estimate: None submitted

ALTERNATIVE

(A) Each electrical corporation shall adopt standards to be implemented by ~~ensure that~~ all persons who perform vegetation management for the electrical corporation, whether employees or contractors, ~~are trained in~~for the proper care of trees and

other woody plants, ~~are knowledgeable regarding~~including safety practices and line clearance techniques~~, and have demonstrated the ability to perform vegetation management safely.~~.

(B) Each electrical corporation shall keep a record of all personnel used by a contractor or the electrical corporation to perform vegetation management for the electrical corporation, and the dates and types of training that each has received.

Comment

Beyond contractually requiring a contractor to provide records of personnel and the type and dates of training each has received, the proposed requirement will add administrative burden without providing benefits to electric corporation customers. Utility contractors will incur extra costs for providing these records to utilities.

Safety Impact	None.
Reliability Impact	None.
Customer Relations Impact	None.
Cost Impact	Low.

- Cost estimate: $5,000 initial cost of process development, $10,000 annual cost of record keeping

ALTERNATIVE

(B) Delete subsection B.

(C) The electrical corporation shall monitor and document all vegetation management and related activities it or its contractors performs. Documentation shall include, but shall not be limited to:

1. The municipality in which the work was performed;

2. Identification of each circuit and substation where vegetation management was performed;

3. The type of vegetation management performed including removal, trimming and spraying and methods used;

4. The crew size and supervisor's name;

5. The date of activity;

6. Any safety hazards encountered;

7. Any unexpected occurrence or accident resulting in death, life-threatening or serious injury to a person assigned to perform vegetation management activities or the public; and

8. Vegetation management planned for the following year.

Comment

Some of this information is routinely collected, but some is not. Routine, scheduled maintenance is often documented by circuit, however new reporting tools would need to be developed to record municipal name for all locations in which a crew may work on a given day. New reporting systems or services would need to be developed or acquired. Safety hazards observed on the electrical system by those involved in vegetation management are normally reported to appropriate persons for correction, but not necessarily documented in a permanent record. Documentation of "all vegetation management and related activities" is nearly impossible to accomplish, but yet required by this subsection.

Safety Impact	None.
Reliability Impact	None.
Customer Relations Impact	None.
Cost Impact	Low to high.

- Cost estimate: None submitted

ALTERNATIVE

(C) The electrical corporation shall monitor and document ~~all~~ scheduled vegetation management and related activities it or its contractors performs. Documentation shall include~~, but shall not be limited to~~:

~~1. The municipality in which the work was performed;~~

~~2~~1. Identification of each circuit and substation where vegetation management was performed;

~~3~~2. The type of vegetation management performed including removal, trimming and spraying and methods used;

~~4~~3. The date of activity.~~crew size and supervisor's name;~~

(D) Each electrical corporation shall include a summary of the information required in (C) above about its vegetation management during the past year, and vegetation management planned for the following year in an annual report to be filed with the Commission by May 31st each year, with verification by affidavit of an officer who has knowledge of the matters stated therein. This information shall include, at a minimum, the name of each municipality in which the electrical corporation conducted vegetation management during the preceding year, and all circuits and operating areas affected.

Comment

This subsection would require reporting maintenance by municipality, in addition to the normal tracking by circuit. The provision to report annual work by municipality may tend to politicize the maintenance program to an extent greater than it is currently.

Safety Impact	None.
Reliability Impact	None.
Customer Relations Impact	None.
Cost Impact	Low.

- Cost estimate: $5,000 initial cost for report development, $20,000 annual costs of reporting

ALTERNATIVE

(D) Each electrical corporation shall include a summary of the information required in (C) above about its vegetation management during the past year, and vegetation management planned for the following year in an annual report to be filed with the Commission by May 31st each year, with verification by affidavit of an officer who has knowledge of the matters stated therein. ~~This information shall include, at a minimum, the name of each municipality in which the electrical corporation conducted vegetation management during the preceding year, and all circuits and operating areas affected.~~

(E) Each electrical corporation shall report its own violations of this rule to the Commission within 30 days of discovery and include its plan for correcting the violation.

(F) The Staff of the Commission shall review each electrical corporation's vegetation management annual report for compliance with the provisions of this rule. The Staff shall identify any deficiencies in the annual report of each electrical corporation and file its analysis and recommendations for each electrical corporation complying with the provisions of this rule.

(7) Public notice of planned vegetation management

(A) Each electrical corporation shall make a diligent attempt to notify all property owners or occupants that may be affected by planned vegetation management. This requirement will be satisfied if the electrical corporation provides notice to affected property owners or occupants at least seven (7) days, but not more than 45 days, prior to performing any vegetation management activity. Notice shall be provided by direct mailing, door hanger, post card, bill insert, personal contact or any other

Commission-approved method.

(B) Each electrical corporation shall maintain a record of the dates, content, and addresses to which all notices provided under subsection (A) were given until the subsequent vegetation management cycle has occurred for each affected property owner or occupant.

(C) Each electrical corporation or its contractor shall provide written notice of any pending vegetation management activities to a primary contact for each political subdivision affected. The primary contact shall be selected by mutual agreement between the electrical corporation and the highest elected official, or if no elected official, then the highest appointed official, of the political subdivision.

(D) An electrical corporation shall notify all political subdivisions that may be affected by vegetation management activities. The notice shall be made in writing to the primary contact designated under (C) above, at least two months in advance of the planned vegetation management. This notice shall include the planned dates and locations of the vegetation management. In addition, the notice of vegetation management shall be in a form appropriate to each electrical corporation's procedures and easement rights.

Comment

Notification requirements of customers is similar to current practice, but will require new procedures to assure that notification is not conducted more than 45 days from the time work actually takes place. Also, requiring detailed notification documentation (B) will require significant additional resources and/or systems (at significant additional cost) in order to comply. In some cases circumstances could require multiple notifications. Notification of municipal jurisdictions is somewhat more stringent than current practice and will require additional record keeping and staff time.

Safety Impact	None.
Reliability Impact	None.
Customer Relations Impact	None. Based upon customer feedback, current practices appear adequate.
Cost Impact	Low to moderate.

- Cost estimate: $10,000 initial cost of personnel and record keeping software, $10,000 annual cost of record keeping

ALTERNATIVE

(A) Each electrical corporation shall make a diligent attempt to notify all property owners or occupants that may be affected by planned vegetation management. ~~*This requirement will be satisfied if the electrical corporation provides notice to affected property owners or occupants at least seven (7) days, but not more than 45 days, prior to performing any vegetation management activity.*~~ *Notice shall be provided by direct mailing,*

door hanger, post card, bill insert, personal contact or any other Commission-approved method.

(8) Outreach programs

(A) Each electrical corporation shall conduct an annual public education program to inform its customers, as well as the political subdivisions in the electric public utility's service territory, of the importance of vegetation management, and of the electrical corporation's role and responsibility in managing vegetation near electric lines.

(B) The public education program required under this section shall be implemented by direct mail or another method approved by the Commission.

(C) Each electrical corporation shall post its public education materials on its website.

Comment

Outreach requirement is somewhat similar to current practice. Direct public education (i.e., direct mail) is not practiced.

(9) Penalties, Fines, Sanctions and/or Ratemaking Disallowances

(A) Failure to comply with any provision of this rule may subject the violator to penalties, fines, sanctions and /or ratemaking disallowances in accordance with the Commission's statutory authority. No penalties, fines, sanctions and/or ratemaking disallowances shall be imposed for violations of this rule for a period of six months from the effective date of this rule.

Comment

Labor supply is a critical issue affecting the ability of all Missouri utilities to comply with the provisions of the proposed rule. Line clearance contractors report that the labor force necessary to perform the work associated with the proposed rules is not available within the region. Development of the qualified, safe and productive workforce would take years of gradual additions to the existing workforce. Consequently, within six months, all utilities would be in violation of the proposed rules and subject to penalties.

Safety Impact	None.
Reliability Impact	None.
Customer Relations Impact	None.
Cost Impact	High.

- Cost estimate: None submitted

ALTERNATIVE

(A) Failure to comply with any provision of this rule may subject the violator to penalties, fines, sanctions and /or ratemaking disallowances in accordance with the Commission's statutory authority. No penalties, fines, sanctions and/or ratemaking disallowances shall be imposed for violations of this rule for a period of six months from the ~~effective date of this rule~~ compliance contained in each electric corporation's individual vegetation management plan.

(B) An electrical corporation that violates this rule may be subject to a penalty of not less than one hundred dollars ($100.00) and not more than two thousand dollars ($2,000.00) per day per violation, for each day the violation occurs as permitted under Missouri Statutes. The Commission shall notify the electrical corporation of the violation(s) in writing. Upon receipt of the written notice of violation, the electrical corporation shall have five business days to correct the violation(s). Any failure to correct the violation may subject the electrical corporation to a penalty of not less than $100.00 per day for each violation, calculated from the day such written notice was received by the electrical corporation.

Comment

The proposed penalty structure is severe. The requirements, as proposed, could result in millions of dollars in fines for compliance violations that are unavoidable. Labor supply, unrealistic tree removal requirements, excessive clearance requirements and legal constraints alone would impede compliance, for several years, and perhaps forever. The proposed penalties could quickly detract from the utility's ability to provide safe, reliable, least-cost service to customers by financially crippling a utility.

(C) The Commission may consider violations of this rule as a relevant factor in setting rates for the electrical corporation in a case where the Commission is examining the propriety of the electrical corporation's rates.

(D) Penalties, fines, sanctions and/or ratemaking disallowances imposed for violations of this rule are in addition to, not a replacement for, other penalties, fines and/or sanctions that apply under other State laws and regulations and under Federal laws and regulations.

(E) In determining the appropriate penalties, fines, sanctions and/or ratemaking disallowances for violation of this rule, the Commission shall consider the following criteria, and any other factors deemed appropriate and material to the electrical corporation's delay or failure to comply:

1. The good faith efforts, if any, of the electrical corporation in attempting to comply with this rule;

2. The gravity of the violation;

3. The number of past violations by the electrical corporation, including violations of this rule, as well as of other standards, guidelines and procedures adopted by the Commission;

4. The appropriateness of the sanction(s) in light of the size of the electrical corporation;

5. Events judged by the Commission to be beyond the control of the electrical corporation; and

6. Mitigating factors.

Comment

Depending on the meaning of specific provisions of the rule, large and significant fines could be either easily avoided, or impossible to avoid. Either way, additional processes and tracking mechanisms will need to be established to help avoid citation and fine.

(10) Specific Requirements

(A) Each electrical corporation shall comply with the tree trimming standards of this rule by trimming to the extent of:

1. 33 1/3 % of total number of trees required trimming by the 12-month anniversary of the adoption of this rule;

2. 66 2/3% of the total number of trees requiring trimming by the 18-month anniversary of the adoption of this rule; and

3. 100% compliance by the two (2) year anniversary of the adoption of this rule.

Comment

Implementation of the proposed standards within the specified timeframe will require significant additional vegetation management resources. It will be likely impossible for the vegetation management contractor industry to be able to meet the demands for the significant additional labor and equipment resources that will be required in such a short time period. This will obviously be a statewide issue, but may disproportionately impact individual utilities, thus hindering efforts to achieve compliance.

Safety Impact	None.
Reliability Impact	None.
Customer Relations Impact	None.
Cost Impact	High.

- Cost estimate: None submitted

ALTERNATIVE | *(A) Delete Part A*

(B) Each electric corporation must maintain the following minimum clearances of vegetation from conductors:

1. Twenty-five (25) feet for conductors energized above 50,000 volts.

Comment

Implementation of the proposed standards within the specified timeframe will require significant additional vegetation management resources. It will be very difficult, maybe even impossible for the vegetation management contractor industry to be able to meet the demands for the significant additional labor and equipment resources that will be required in such a short time period. This will obviously be a statewide issue, but may disproportionately impact individual utilities, thus hindering efforts to achieve compliance.

Maintaining 25 feet of clearance is nearly impossible to achieve and unnecessary for lower voltage transmission lines that were not designed for this standard, assuming the clearance to be maintained at all times is from the point of maximum sag or blowout. 25 feet of clearance is greater than the conductor-to-ground clearance required by NESC standards for many transmission voltages. Existing easement provisions do not always provide rights to obtain 25 feet of clearance at the time of trimming, much less the additional 10 feet or more necessary to maintain that clearance over a reasonable maintenance cycle. NERC transmission standards only require utilities to maintain clearance at all times no less than flashover distance for a particular voltage. Those clearances are included in Table 2.

Table 2. (IEEE) Standard 516-2003 (Guide for Maintenance Methods on Energized Power Lines)

Line Nominal Voltage	**Minimum Vegetation-to-Conductor Clearance to Maintain Electrical Integrity***	
(kV)	(feet)	(meters)
765	20.4	6.2
500	14.7	4.5
345	9.4	2.9
230	5.1	1.6
161	3.4	1.1
138	2.9	0.9
88-115	2.5	0.8
69	1.3	0.4
* These distances shall be used unless the transmission owner can demonstrate it knows the transient overvoltage factors for its system, in which case the values from Table 7 may be used. Correction factors must be applied for altitudes above 900 m.		

Safety Impact | None.

Reliability Impact | Low.

Customer Relations Impact | Detrimental.

Cost Impact | High.

Cost estimate: None submitted

ALTERNATIVE |

(B-1) Eliminate subsection B-1 and defer to NERC standards approved by FERC.

2. Ten (10) feet for conductors energized at 600 through 50,000 volts, except clearances may be reduced to three (3) feet if the vegetation is not readily climbable.

Comment

The cost of maintaining 10 feet of clearance on climbable trees is nearly impossible to determine, since the population of trees meeting the MOPSC definition of climbable is not known. This provision would apply to any evergreen with a main stem within 10 feet of conductors that has not had low branches removed. The cost to maintain at least three (3) feet of clearance on all other trees will require increased clearance from current practice, and/or shorter cycles. Benefits to reliability from this provision are likely to be small.

Safety Impact | Low.

Reliability Impact | Low.

Customer Relations Impact | Detrimental.

Cost Impact | High.

- Cost estimate: included with costs following Part B, Subsection 5.

ALTERNATIVE |

(B-2) Eliminate subsection B-2 and replace it with a provision to establish a vegetation management plan and implement the approved plan.

3. Intrusion of limited small branches and new tree growth into the minimum clearance areas of 1. and 2. above is acceptable provided the vegetation does not come closer than six (6) inches to the conductor.

4. Subtransmission lines and three-phase distribution feeders / backbone circuits (portion of distribution system directly interconnected with distribution substation and prior to the first protective device) shall be trimmed vertically to remove overhanging limbs to the widths prescribed in 1., 2., and 3. above; and

5. The radial clearances in subsection 10(B) are minimum clearances that should be established between the vegetation and the energized conductors and associated live parts where practicable. Vegetation management practices may make it advantageous to obtain greater clearances than those listed. In the event that the specific trimming conflict with any other materials within this chapter the strictest rules shall apply.

Issue

To the extent that intrusion of limited small branches are allowed within six (6) inches of distribution conductors (this provision makes no sense for transmission lines) items 2, 3 and 4 are essentially a "no touch rule". Such a standard would increase costs considerably. Such rules do not help improve reliability, since few interruptions result from incidental contact between trees and distribution lines, and only under certain conditions. Most tree-caused interruptions occur as a result of branch failures or entire tree trunk failures.

Removal of overhanging limbs does help reduce outage risk and is a useful practice in conjunction with professional judgment regarding the benefit of the practice in particular circumstances.

To accomplish either the three or ten foot distribution clearance standard, annual clearance cycles would need to be established and significantly more clearance achieved at the time of trimming.

Safety Impact	None.
Reliability Impact	Low.
Customer Relations Impact	Detrimental.
Cost Impact	High.

- Cost estimate: $20,000 initial rescheduling costs, $1,800,000 to $6,000,000 annual costs for inspecting and work planning all circuits on a 2-year cycle and either performing selective maintenance ($1.8M) or establishing a two-year maintenance cycle for all trees ($6.0M).

ALTERNATIVE

(B-3-4) Eliminate subsection B-3-4 and replace it with a provision to establish a vegetation management plan and implement the approved plan.

(11) Variances

A variance from a provision of this rule may be granted only for good cause shown.

APPENDIX A

Complete Text of Missouri Public Service Commission 7/16/2007 Proposed Rule 4 CSR 240-23.030 Electrical Corporation Vegetation Management Standards and Reporting Requirements Pages 1104-1114 as published in the Missouri Register Vol. 32, No. 14

Title 4—DEPARTMENT OF ECONOMIC DEVELOPMENT
Division 240—Public Service Commission
Chapter 23—Electric Utility Operational Standards

PROPOSED RULE

4 CSR 240-23.030 Electrical Corporation Vegetation Management Standards and Reporting Requirements. Commissioner Connie Murray dissented from the decision to propose the following rule. The text of her dissent follows the language of the proposed rule below.

PURPOSE: This rule sets forth requirements that electrical corporations shall follow in managing vegetation in proximity to an energized conductor in order to ensure public safety and the efficient and reliable supply of electric power. The requirements in this rule provide the minimum standards for conductor clearances from vegetation to provide safety for the public and utility workers, reasonable service continuity, and fire prevention. Each electrical corporation must have a vegetation management plan and keep appropriate records to ensure that timely trimming is accomplished to keep the designated minimum clearances. These records must be made available to the commission upon request.

(1) Definitions. The following words and terms, when used in this rule, shall have the following meaning unless the context clearly indicates otherwise.

(A) Arboriculture means the cultivation of trees, shrubs and other woody plants.

(B) Agricultural crop means a cash crop which is sold for money.

(C) Border zone means the space from the edge of the wire zone, as defined herein, to the outer boundary of the right-of-way.

(D) Contractor means a person or entity, other than the commission, with which electrical corporation contracts to perform work, furnish information and/or material. This term includes all subcontractors engaged by a contractor to perform any of the obligations required by a contract.

(E) Distribution line means a primary electric voltage line, wire or cable, including supporting structures and appurtenant facilities, which deliver electricity from transformation points on the transmission system to points of connection at a customer's premises that would not be considered a transmission line as set forth in this definition section.

(F) Energized conductor means an electric circuit or equipment through which electricity is flowing or usually flows within the transmission or distribution system.

(G) Electrical corporation means electrical corporation as defined in section 386.020(15), RSMo Supp. 2006.

(H) Electric utility arborist means a person that has been certified as a Utility Specialist by the International Society of Arboriculture.

(I) Grass means a type of plant with jointed stems, slender flat leaves and spike-like flowers.

(J) Major event means any of the following:

1. A sustained interruption of electric service resulting from conditions beyond the control of the electrical corporation, which may include, but is not limited to, thunderstorms, tornadoes, hurricanes, heat waves or snow and ice storms, which affect at least ten percent (10%) of the customers in an operating area. Due to an electrical corporation's documentable need to allocate field resources to restore service to affected area(s) when one operating area experiences a major event, the major event shall be deemed to extend to those other operating areas of that electrical corporation which are providing assistance to the area(s) affected by the major event. The commission retains authority to examine the characterization of a major event;

2. An unscheduled interruption of electric service resulting from an action:

A. Taken by an electrical corporation under the direction of an independent system operator or regional transmission organization;

B. Taken by the electrical corporation to prevent an uncontrolled or cascading interruption of electric service; or

C. Taken by the electrical corporation to maintain the adequacy and security of the electric system, including emergency load control, emergency switching and energy conservation procedures, which affects one (1) or more customers;

3. A sustained interruption occurring during an event which is outside the control of the electrical corporation and is of sufficient intensity to give rise to a state of emergency or disaster being declared by state government.

(K) Operating area means a geographical subdivision of each electrical corporation's franchise territory as defined by the electrical corporation. These areas may also be referred to as regions, divisions or districts.

(L) Readily climbable means vegetation having both of the following characteristics:

1. Low limbs, accessible from the ground and sufficiently close together so that the vegetation can be climbed by a child or average person without using a ladder or other special equipment; and

2. A main stem or major branch that would support a child or average person either within arms' reach of an uninsulated energized electric line or within such proximity to the electric line that the climber could be injured by direct or indirect contact with the line.

(M) Right-of-way means less than fee interest in property, which gives a public utility a limited right to use land owned by another person or entity for the purpose of transmitting or distributing electricity. This right is typically memorialized in an easement. This term also includes the parcel of land for which a public utility holds a right-of-way or easement.

(N) Transmission line means an electrical line, wire or cable (including the supporting structures), and appurtenant facilities which transmits electricity from a generating plant to electric distribution lines. An electric transmission line usually has a rating exceeding sixty-nine (69) kilovolts.

(O) Tree means a perennial woody plant with a main trunk and branches forming a distinct elevated crown at a height exceeding three feet (3') at maturity.

(P) Vegetation means trees, shrubs and other woody plants.

(Q) Vegetation management means the removal of vegetation or the prevention of vegetative growth to maintain safe conditions around energized conductor(s) and ensure reliable electric service. Vegetation management consists of biological, chemical, cultural, manual and mechanical methods to control vegetation in order to prevent hazards caused by the encroachment of vegetation on energized conductor(s), and to provide utility access to the conductor.

(R) Volts means nominal voltage levels, measured phase-to-phase.

(S) Wire zone means the land located directly under the widest portion of a transmission line. The wire zone is bounded on each side by a location on the ground that is directly under the outermost transmission wire.

(T) Woody plant means any vascular plant that has a perennial woody stem and supports continued vegetative growth above ground from year to year and includes trees.

(2) General Provisions.

(A) An electrical corporation shall ensure that vegetation management is conducted in accordance with this rule on energized conductors of six hundred (600) volts and higher, whether for distribution or transmission, that the electrical corporation owns, in whole or in part.

(B) Each electrical corporation shall obtain, and shall ensure that its contractors obtain, all required permits and licenses prior to commencement of vegetation management.

(C) An electrical corporation that utilizes chemical or biological agents in vegetation management shall comply with any laws or regulations governing the use of those biological and chemical agents.

(D) Each electrical corporation shall employ a vegetation manager, who is an electric utility arborist, as defined in section (1). The vegetation manager shall be an employee of the electrical corporation, not a contractor. The electrical corporation shall provide the vegetation manager with the authority and the resources to administer all aspects of the electrical corporation's vegetation management program, and the vegetation manager shall ensure that the electrical corporation complies with this rule. The vegetation manager's name and contact information shall be posted on the electrical corporation's website and shall be included on all notifications provided pursuant to the notice requirements of section (6).

(E) Each electrical corporation shall ensure that all contractors hired to perform vegetation management inform its workers of all applicable federal, state, county, and municipal laws, rules or regulations that apply to the work performed under this rule. The electrical corporation shall also ensure that all contractors comply with each applicable requirement of this rule.

(F) An electrical corporation that performs vegetation management at the request of a municipality or government agency, other than vegetation management required under this rule, may require the requesting party to pay any cost above the electrical corporation's cost to perform the vegetation management required by this rule. An electrical corporation shall not perform such additional vegetation management if the additional vegetation management would decrease the reliability or safety of an energized conductor.

(G) Upon a written request from a municipality, the commission may authorize an electrical corporation to temporarily suspend compliance with one (1) or more of the vegetation management requirements of this rule, within the following limits:

1. The suspension of compliance shall apply only to the distribution system, and shall not apply to vegetation management under transmission lines;

2. The suspension of compliance shall apply only to those portions of a distribution system that are located within the municipality, and that do not affect service to any adjacent municipality;

3. The electrical corporation shall not suspend compliance with any requirement if the suspension would result in danger to the public; and

4. If the suspension results in additional costs to the electrical corporation due to lack of tree trimming, the municipality shall reimburse the electrical corporation for these costs.

(H) An electrical corporation may seek recovery in rates of the distribution and transmission portion of vegetation management program costs required under this rule in future rate proceedings. However, the commission may deny recovery in future rate proceedings of costs an electrical corporation incurs due to a delay in implementing a tree trimming program or costs associated with meeting compliance standards after failure to achieve the standards. Upon a showing of good cause by the electrical corporation for the delay or the failure to meet the compliance standards, the commission may allow such recovery.

(I) Upon an electrical corporation's receiving notice of, or having actual knowledge of, any dead, rotten, or diseased vegetation which overhangs, leans toward, or may fall into an energized conductor or guy, the electrical corporation shall promptly remove or remedy the potential safety concern. If removal of the vegetation requires the electrical corporation to access or cross property for which it does not hold an easement or other legal authorization, the electrical corporation shall take all reasonable steps to obtain any necessary permission from the property owner and remove or remedy the potential safety concern as promptly as possible. In response to a major event, the electrical corporation will only be required to remedy the potentially dangerous condition.

(3) Maintenance Cycle.

(A) An electrical corporation shall perform a visual inspection at least once every two (2) years of all energized conductors, to determine whether vegetation management is needed. Where vegetation is close enough to pose a threat to its energized conductors, the electrical corporation shall perform vegetation management. The visual inspection may be performed from the ground except in cases where the conductor is not visible from the ground. The electrical corporation shall take into account the height of the vegetation and the distance of the vegetation from the energized conductor, in determining whether vegetation management is needed. Vegetation management performed along a circuit in compliance with this rule shall meet this two (2)-year visual inspection requirement.

(B) In addition to the maintenance required in subsection (A) above, if an electrical corporation becomes aware either through notification or during the inspections required under subsection (A) above or at any other time, of any vegetation close enough to pose a threat to its energized conductor, which is likely to affect reliability or safety prior to the next required vegetation management, the electrical corporation shall ensure that necessary vegetation management is promptly performed as required under section (4).

(4) Technical Standards for Vegetation Management.

(A) Each electrical corporation shall ensure that vegetation management conducted on its energized conductors is performed in accordance with the standards, guidelines and procedures set forth in this rule, which includes to the extent not otherwise inconsistent with this rule, the following publications:

1. Pruning Trees Near Electric Utility Lines, by Dr. Alex L. Shigo. This publication may be available from Shigo and Tree Associates, PO Box 769, Durham, New Hampshire 03824;

2. Part 1 of the document entitled Tree, Shrub, and Other Woody Plant Maintenance-Standard Practices. This document, also known as ANSI A300, is published by the American National Standards Institute;

3. Best Management Practices, Utility Pruning of Trees, 2004. This title is published by the International Society of Arboriculture;

4. Environmental Stewardship Strategy for Electric Utility Rights-of-Way, (2002). This title is published by the Edison Electric Institute Vegetation Management Task Force;

5. Pruning, Trimming, Repairing, Maintaining, and Removing Trees, and Cutting Brush—Safety Requirements, 1994. This document, also known as ANSI Z133.1, is published by the American National Standards Institute;

6. Native Trees, Shrubs And Vines For Urban And Rural America: A Planting Design Manual for Environmental Designers, by Hightshoe, G.L., 1987, is published by John Wiley and Sons;

7. Manual of Woody Landscape Plants 5th Ed., by Michael A. Dirr. Stipes Publishing, LLC; 5th edition (August 1998);

8. Hortus Third: A Concise Dictionary of Plants Cultivated in the United States and Canada, by L.H. Bailey Hortorium, 1976; and

9. *National Electric Safety Code* as referred to in 4 CSR 240-18.

(B) Where multiple standards, guidelines and procedures listed at subsection (A) above would apply or conflict, the vegetation manager, or his or her designee, shall select the most appropriate standard, guideline or procedure.

(C) Each electrical corporation shall develop its own vegetation management standards, guidelines and procedures, which shall be consistent with this rule. In developing these standards, guidelines and procedures, an electrical corporation shall prioritize its vegetation management based upon:

1. The extent of the potential for vegetation to interfere with the energized conductor; and

2. The voltage of the affected energized conductor; and the relative importance of the affected energized conductor in maintaining safety and reliability.

(D) Each electrical corporation shall file a copy of its vegetation management standards, guidelines and procedures at the commission

by January 1, 2008, with verification by affidavit of an officer who has knowledge of the matters stated therein. If an electrical corporation makes a change in its vegetation management standards, guidelines or procedures, it shall file a copy of the change at the commission no later than thirty (30) days prior to implementing the change, with verification by affidavit of an officer who has knowledge of the matters stated therein.

(E) Each electrical corporation's vegetation management standards, guidelines and procedures shall cover, at a minimum, all of the following activities:

1. Tree pruning and removal;

2. Vegetation management around poles, substations and energized conductors;

3. Manual, mechanical, or chemical vegetation management along rights-of-way;

4. Inspection of areas where vegetation management is performed, both before and after the vegetation management;

5. Research and development of improved vegetation management; and

6. Public education.

(F) Among the factors the electrical corporation shall consider in determining the extent of vegetation management to be performed at a particular site are:

1. The rate at which each species of vegetation is likely to grow back;

2. The voltage of the energized conductor, with higher voltages requiring larger clearances, including but not limited to:

A. Location;

B. Configuration; and

C. Sag of conductors at elevated temperatures and under wind and ice loading, and growth habit, strength, and health of vegetation growing adjacent to the conductor with the combined displacement of the vegetation, supporting structures, and conductors under adverse weather or routine wind conditions;

3. The potential movement of the energized conductor during various weather conditions;

4. The potential movement of trees or other vegetation during various weather conditions; and

5. The electrical corporation's legal rights to access the area where vegetation management is to be performed.

(G) The electrical corporation shall remove all trimmings and cut vegetation resulting from vegetation management that are part of the electrical corporation's regular maintenance cycle, within five (5) business days after the vegetation was cut, except if:

1. The electrical corporation obtains consent from the owner of the property upon which the trimmings or cut vegetation are located to leave the trimmings or cut vegetation; or

2. The vegetation management is performed as a direct result of a major event, in which case the electrical corporation shall remove the trimmings and cut vegetation that was cut or trimmed as part of its vegetation management activities after the conclusion of the major event.

(5) Transmission Line Vegetation Management.

(A) In addition to the other requirements of this rule, transmission lines, as defined at section (1), are subject to the requirements in this section.

(B) In addition to meeting the other requirements in this section, each electrical corporation shall ensure that the following requirements for transmission lines are met:

1. Clearing under and over transmission lines shall be wide enough so that no vegetation or parts of vegetation will grow or fall into the transmission lines prior to the next scheduled vegetation management cycle;

2. An electrical corporation shall not allow any vegetation that grows taller than fifteen feet (15') at maturity to grow anywhere within a transmission line right-of-way;

3. Landowners and political subdivisions may request the right to allow woody plants that naturally mature above three feet (3') tall to grow in the wire zone and/or border zone. The electrical corporation's vegetation manager or his/her designee will be responsible for determining if these woody plants are permissible;

4. The electrical corporation shall not allow any woody plant species that naturally matures above fifteen feet (15') to grow in the border zone;

5. Grass vegetation and non-woody agricultural crops, not exceeding twelve feet (12') in height at maturity, shall be permitted to grow anywhere in the right-of-way;

6. Where an electrical corporation has cleared a right-of-way of vegetation and bare soil is exposed, the electrical corporation shall comply with the soil erosion requirements of the applicable soil conservation district in order to prevent soil erosion;

7. To the extent that any plant species identified by the Missouri Department of Conservation as invasive and non-indigenous to Missouri poses a hazard to electrical transmission conductors, the electrical corporation shall make reasonable efforts to eliminate the species from the entire right-of-way. To do so, the electrical corporation shall use the best integrated vegetation management practices available and practical; and

8. In each electrical corporation's March billing cycle for customers in which vegetation management is scheduled that year, or two (2) months prior to the commencement of vegetation management on a particular property, whichever is earlier, each electrical corporation shall notify owners of land upon which the electrical corporation holds a right-of-way of the requirements in this subsection, through a separate direct mailing.

(C) For the purposes of this section, the mature height of woody and non-woody agricultural crops shall be determined in accordance with the publications incorporated in this rule in subsection (4)(A).

(D) Each year, before June 1, each electrical corporation shall develop a schedule for transmission line vegetation management. The schedule shall:

1. List the transmission lines planned for vegetation management for the next four (4) years;

2. Ensure that transmission line vegetation management is performed prior to vegetation becoming a threat to safety or service reliability; and

3. Be distributed to municipalities served by, or whose residents are served by, or through, transmission lines of the electrical corporation or those with such lines located within the boundaries of the municipality.

(6) Training, Record Keeping and Reporting.

(A) Each electrical corporation shall ensure that all persons who perform vegetation management for the electrical corporation, whether employees or contractors, are trained in the proper care of trees and other woody plants, are knowledgeable regarding safety practices and line clearance techniques, and have demonstrated the ability to perform vegetation management safely.

(B) Each electrical corporation shall keep a record of all personnel used by a contractor or the electrical corporation to perform vegetation management for the electrical corporation, and the dates and types of training that each has received.

(C) The electrical corporation shall monitor and document all vegetation management and related activities it or its contractors performs. Documentation shall include, but shall not be limited to:

1. The municipality in which the work was performed;

2. Identification of each circuit and substation where vegetation management was performed;

3. The type of vegetation management performed including removal, trimming and spraying and methods used;

4. The crew size and supervisor's name;

5. The date of activity;

6. Any safety hazards encountered;

7. Any unexpected occurrence or accident resulting in death, life-threatening or serious injury to a person assigned to perform vegetation management activities or the public; and

8. Vegetation management planned for the following year.

(D) Each electrical corporation shall include a summary of the information required in subsection (C) above about its vegetation management during the past year, and vegetation management planned for the following year in an annual report to be filed with the commission by May 31 each year, with verification by affidavit of an officer who has knowledge of the matters stated therein. This information shall include, at a minimum, the name of each municipality in which the electrical corporation conducted vegetation management during the preceding year, and all circuits and operating areas affected.

(E) Each electrical corporation shall report its own violations of this rule to the commission within thirty (30) days of discovery and include its plan for correcting the violation.

(F) The staff of the commission shall review each electrical corporation's vegetation management annual report for compliance with the provisions of this rule. The staff shall identify any deficiencies in the annual report of each electrical corporation and file its analysis and recommendations for each electrical corporation complying with the provisions of this rule.

(7) Public Notice of Planned Vegetation Management.

(A) Each electrical corporation shall make a diligent attempt to notify all property owners or occupants that may be affected by planned vegetation management. This requirement will be satisfied if the electrical corporation provides notice to affected property owners or occupants at least seven (7) days, but not more than forty-five (45) days, prior to performing any vegetation management activity. Notice shall be provided by direct mailing, door hanger, postcard, bill insert, personal contact or any other commission-approved method.

(B) Each electrical corporation shall maintain a record of the dates, content, and addresses to which all notices provided under subsection (A) were given until the subsequent vegetation management cycle has occurred for each affected property owner or occupant.

(C) Each electrical corporation or its contractor shall provide written notice of any pending vegetation management activities to a primary contact for each political subdivision affected. The primary contact shall be selected by mutual agreement between the electrical corporation and the highest elected official, or if no elected official, then the highest appointed official, of the political subdivision.

(D) An electrical corporation shall notify all political subdivisions that may be affected by vegetation management activities. The notice shall be made in writing to the primary contact designated under subsection (C) above, at least two (2) months in advance of the planned vegetation management. This notice shall include the planned dates and locations of the vegetation management. In addition, the notice of vegetation management shall be in a form appropriate to each electrical corporation's procedures and easement rights.

(8) Outreach Programs.

(A) Each electrical corporation shall conduct an annual public education program to inform its customers, as well as the political subdivisions in the electric public utility's service territory, of the importance of vegetation management, and of the electrical corporation's role and responsibility in managing vegetation near electric lines.

(B) The public education program required under this section shall be implemented by direct mail or another method approved by the commission.

(C) Each electrical corporation shall post its public education materials on its website.

(9) Penalties, Fines, Sanctions and/or Ratemaking Disallowances.

(A) Failure to comply with any provision of this rule may subject the violator to penalties, fines, sanctions and/or ratemaking disallowances in accordance with the commission's statutory authority. No penalties, fines, sanctions and/or ratemaking disallowances shall be imposed for violations of this rule for a period of six (6) months from the effective date of this rule.

(B) An electrical corporation that violates this rule may be subject to a penalty of not less than one hundred dollars ($100) and not more than two thousand dollars ($2,000) per day per violation, for each day the violation occurs as permitted under Missouri statutes. The commission shall notify the electrical corporation of the violation(s) in writing. Upon receipt of the written notice of violation, the electrical corporation shall have five (5) business days to correct the violation(s). Any failure to correct the violation may subject the electrical corporation to a penalty of not less than one hundred dollars ($100) per day for each violation, calculated from the day such written notice was received by the electrical corporation.

(C) The commission may consider violations of this rule as a relevant factor in setting rates for the electrical corporation in a case where the commission is examining the propriety of the electrical corporation's rates.

(D) Penalties, fines, sanctions and/or ratemaking disallowances imposed for violations of this rule are in addition to, not a replacement for, other penalties, fines and/or sanctions that apply under other state laws and regulations and under federal laws and regulations.

(E) In determining the appropriate penalties, fines, sanctions and/or ratemaking disallowances for violation of this rule, the commission shall consider the following criteria, and any other factors deemed appropriate and material to the electrical corporation's delay or failure to comply:

1. The good faith efforts, if any, of the electrical corporation in attempting to comply with this rule;

2. The gravity of the violation;

3. The number of past violations by the electrical corporation, including violations of this rule, as well as of other standards, guidelines and procedures adopted by the commission;

4. The appropriateness of the sanction(s) in light of the size of the electrical corporation;

5. Events judged by the commission to be beyond the control of the electrical corporation; and

6. Mitigating factors.

(10) Specific Requirements.

(A) Each electrical corporation shall comply with the tree trimming standards of this rule by trimming to the extent of:

1. Thirty-three and one-third percent (33 1/3%) of total number of trees required trimming by the twelve (12)-month anniversary of the adoption of this rule;

2. Sixty-six and two-thirds percent (66 2/3%) of the total number of trees requiring trimming by the eighteen (18)-month anniversary of the adoption of this rule; and

3. One hundred percent (100%) compliance by the two (2)-year anniversary of the adoption of this rule.

(B) Each electrical corporation must maintain the following minimum clearances of vegetation from conductors:

1. Twenty-five feet (25') for conductors energized above fifty thousand (50,000) volts;

2. Ten feet (10') for conductors energized at six hundred (600) through fifty thousand (50,000) volts, except clearances may be reduced to three feet (3') if the vegetation is not readily climbable;

3. Intrusion of limited small branches and new tree growth into the minimum clearance areas of paragraphs (B)1. and 2. above is acceptable provided the vegetation does not come closer than six inches (6") from the conductor;

4. Subtransmission lines and three (3)-phase distribution feeders/backbone circuits (portion of distribution system directly interconnected with distribution substation and prior to the first protective device) shall be trimmed vertically to remove overhanging limbs to the widths prescribed in paragraphs (B)1., 2., and 3. above; and

5. The radial clearances in subsection (10)(B) are minimum clearances that should be established between the vegetation and the energized conductors and associated live parts where practicable. Vegetation management practices may make it advantageous to obtain greater clearances than those listed. In the event that the specific trimming conflicts with any other materials within this chapter the strictest rules shall apply.

(11) Variances. A variance from a provision of this rule may be granted only for good cause shown.

AUTHORITY: sections 386.040, 386.250, 386.310 and 393.140, RSMo 2000, and 393.130, RSMo Supp. 2006. Original rule filed June 15, 2007.

PUBLIC COST: This proposed rule will cost state agencies or political subdivisions approximately sixty-five thousand seven hundred sixty-seven dollars ($65,767) in the first year of implementation and sixty thousand seven hundred forty-seven dollars ($60,747) per year, thereafter.

PRIVATE COST: This proposed rule will cost private entities approximately $364,094,238 in the first year of implementation and $288,473,333 per year, thereafter.

NOTICE OF PUBLIC HEARING AND NOTICE TO SUBMIT COMMENTS: Anyone may file comments in support of or in opposition to this proposed rule with the Missouri Public Service Commission, Colleen M. Dale, Secretary of the Commission, PO Box 360, Jefferson City, MO 65102. To be considered, comments must be received at the commission's offices on or before August 15, 2007, and should include a reference to Commission Case No. EX-2007-0214. If comments are submitted via a paper filing, an original and eight (8) copies of the comments are required. Comments may also be submitted via a filing using the commission's electronic filing and information system at <http://www.psc.mo.gov/efis.asp>. A public hearing regarding this proposed rule is scheduled for August 15, 2007 at 10:00 a.m. in the commission's offices in the Governor Office Building, 200 Madison Street, Jefferson City, Missouri. Interested persons may appear at this hearing to submit additional comments and/or testimony in support of or in opposition to this proposed rule, and may be asked to respond to commission questions. Any persons with special needs as addressed by the Americans with Disabilities Act should contact the Missouri Public Service Commission at least ten (10) days prior to the hearing at one (1) of the following numbers: Consumer Services Hotline 1 (800) 392-4211 (voice) or Relay Missouri at 711.

BEFORE THE PUBLIC SERVICE COMMISSION OF THE STATE OF MISSOURI

In the Matter of Filing Requirement) **Case No. EX-2007-0214**
Rules For Electric Utilities.)

Electrical Corporation Vegetation Management Standards and Reporting Requirements Rule 4 CSR 240-23.030

DISSENTING OPINION OF COMMISSIONER CONNIE MURRAY

I must dissent from the majority's decision to send the proposed Electrical Corporation Vegetation Management Standards and Reporting Requirements Rule, in its present form, to the Missouri Secretary of State. Both, this proposed rule and the draft proposed rule "4 CSR 240-23.020 Electrical Corporation Infrastructure Standards," in my opinion, are an apparent over-reaction to recent storm outages and to reports of reliability issues experienced by a single utility. These rules were hurriedly drafted without the opportunity for a deliberate and detailed technical and legal review by Commission staff that would have otherwise been employed in the ordinary course of rulemaking.

Approximately three months ago, the Commission's technical and legal staff presented a draft rulemaking that was well thought out and drafted in a manner that provided an excellent base from which to incorporate performance standards. After discussing this draft in Agenda, Staff was directed to draft performance standards to be included in the draft and bring the draft proposed rulemaking back to the Commission for further review. Prior to Staff's revised draft rule being completed and brought back to the Commission, the set of rules which was voted upon today and for which I write this dissent was offered, and as a result, the Staff's draft rule was never recalled to Agenda for further discussion by the Commission.

The rule that is being sent to the Missouri Secretary of State is overbroad, fiscally irresponsible and unworkable. If promulgated, the fiscal note shows, the rule would create enormous costs for both the Commission and the Missouri utilities which are subject to the rule. The degree of specificity, burdensome notification and reporting requirements, strict and sometimes conflicting timelines, and heavy fines and penalties for non-compliance combine to remove the utilities' flexibility to accomplish the ultimate goal of providing a higher degree of reliability, all at a cost of hundreds of millions of dollars annually that would ultimately be borne by ratepayers. Further, the fiscal note shows that the review and inspection requirements inuring to the Commission Staff will require the equivalent of an additional full time employee than the Commission currently employees and cost over $60,000 annually, further driving up costs to ratepayers.

I cannot support this attempt to compile the strictest rules that could be located from various states into one melting pot to be thrown out for comments. It is my belief that government agencies have a duty to put forth draft rules that are clear, understandable and are no more burdensome, costly or intrusive than necessary to accomplish a legitimate state interest. Such a draft proposed rule provides the public a meaningful opportunity to contribute to the rulemaking process by suggesting exact and detailed substantive changes, rather than changes to general concepts a draft rule such as this invites. I believe that a more prudent approach would have been to take the time necessary for Staff and the Commission to review and evaluate the potential effects of the rulemaking on all relevant parties, obtain stake-holder input and establish a well reasoned draft rulemaking.

The Missouri Public Service Commission has a legitimate interest in requiring its regulated electric utilities to manage and maintain their infrastructure and control vegetation in such a way that ensures the provision of safe, adequate and reliable service. Protecting that interest could be and should be accomplished by a rulemaking more in line with that originally drafted by the technical and legal staff of the Commission.

This dissent should in no way be construed to mean that I oppose the concept of such a rulemaking. I believe that some utilities are currently not achieving adequate levels of vegetation management and, as a result, administrative rules are needed. However, the draft proposed rulemaking adopted by the Commission today does not serve the best interest of Missouri and its citizens.

For these reasons, I do not support today's vote to send the substitute draft proposed rule to the Missouri Department of Economic Development for review.

Respectfully submitted,

Connie Murray, Commissioner

Dated at Jefferson City, Missouri
on this 14th day of June 2007.

FISCAL NOTE

PUBLIC COST

I. RULE NUMBER

Rule Number and Name	**4 CSR 240-23.030, Electrical corporation vegetation management standards and reporting requirements**
Type of Rulemaking:	Proposed Rule

II. SUMMARY OF FISCAL IMPACT

Affected Agency or Political Subdivision	Estimated Cost of Compliance in the Aggregate
Missouri Public Service Commission	$65,767 first year, $60,747 each year thereafter

III. WORKSHEET

0.5 FTE Utility Engineering Specialist III $25,116 annually
0.5 FTE Utility Engineering Specialist II $22,236 annually
First year equipment $5,020
Annual Equipment Expense $1,090
Annual Office Space Rental $2,700
Annual Travel Expense $9,605

IV. ASSUMPTIONS

All costs in 2007 dollars

Costs reflect estimates provided for other fiscal notes for various General Assembly bills from this year's session.

A total of two additional FTEs were assumed for this rule and the Electrical Corporation Infrastructure Standards rule that is also being considered. Their time is assumed to be evenly split between these two rules. In most cases, these FTEs will be able to conduct reviews of the utilities' vegetation management and infrastructure inspection practices in the same visit. This should reduce their travel time and increase their productivity. However, these reviews will require facility reviews (including walking electric lines and observing utility employees performing the various tasks required by these rules) and on-site document reviews at various district/division offices. This will also require reports by these two FTEs on the status of the utilities' efforts at various times of the year.

FISCAL NOTE

PRIVATE COST

I. RULE NUMBER

Rule Number and Name:	**4 CSR 240-23.030 Electrical Corporation Vegetation Management Standards and Reporting Requirements**
Type of Rulemaking	**Proposed Rule**

II. SUMMARY OF FISCAL IMPACT

Estimate of the number of entities by class which would likely be affected by the adoption of the proposed rule:	Classification by types of the business entities which would likely be affected:	Estimate in the aggregate as to the cost of compliance with the rule by the affected entities:
Four (4)	Investor Owned Electric Utility Companies	
	AmerenUE	Implementation: $0 $184,000,000 annually
	Empire	Implementation - $2,300,000 $45,433,333 annually
	Aquila	Implementation - $59,550,905 $14,300,000 annually
	Kansas City Power & Light	Implementation - $13,770,000 $44,740,000 annually

III. WORKSHEET

For position descriptions and fiscal impacts please see ASSUMPTIONS below for each utility.

IV. ASSUMPTIONS

Ameren

1. (3)(A): The newly implemented inspection program call for urban lines (defined as 35 or more customer on average per oh/ug line mile to be inspected every two years (once by an inspector and once by the tree crew performing maintenance every 4 years). Rural lines would be inspected every 3 years-once by an inspector and once by a tree crew. Assume Ameren definition of urban/rural. The proposed standard would require the rural lines to be inspected one extra time during the 6 year period or 13,347 miles times $286=$381,724. Assume under Ameren present understanding of NESC 218 that incidental vegetation contact is not a safety or reliability threat, this proposed standard would not greatly affect present cost. If interpretation of "close enough to pose a threat" is similar to the proposed standards below-see other costs.
2. (3)(B): AmerenUE presently addresses any reliability or safety concerns between trim cycles. Assume the same Ameren criteria presently being used is continued. If staff interpretation is different, could add substantial cost.

3. 4: Present process includes a pre-work inspection of maintenance circuits. Assume present audit process of having the contractor supervisor audit minimum 2 days per month and vegetation supervisor audit 10% of contractor management is sufficient to meet this standard.
4. 5: Unable to determine cost implications due to vagueness of draft language.
5. 6: Assume present participation on urban councils, municipal meetings, individual customer inquires and all present educational material would meet this requirement.
6. 1. In wooded, rural areas would either have to research and contact all property owners or make arrangements, if possible, to bring in mowers.
7. 2: Range of cost reflects both the severity of the storms and frequency. Assume additional limited tree crews would be available. Assume Ameren would be responsible for disposal of all tree brush and wood. Assume Ameren would be given several months post major storm to complete work. Assume that cranes/lift trucks can access the majority of lines.
8. 1: Assumption is that ALL trees that are able to make contact, if they fell would need to be cut down. Assumption is that MPSC or other body would grant Ameren the additional rights and easements. Assume no legal claims as a result. Assume floor of existing ROW is clear of vegetation. Assume an additional 60' (30' on each side) for clearing mature trees. Assume all material can be left on site wind-row. Assume 50% of all transmission rights-of-way will be affected (1217 miles). Assume per acre clearing cost to be $2393. Assume annual maintenance will be light density, after initial clearing, to be light density and addressed by low volume foliar application on a 3 year cycle for "expanded" ROW.
9. 2: Assumption is that ALL trees which can grow greater than 15' must be removed. Mature trees located in deep valleys and urban areas with more than sufficient conductor to tree clearance would require removal. Assume 3% of the transmission system has brush over 15' in height(1591 Acres). The associated cost for cut stubble $700 per acre. Assume 3% of system has tall trees in ravines/valleys(1591 Acres). The associated cost to clear would be $2393(did not figure any erosion remediation which could be substantial). Assume 2500 yard trees in the system with average cost to remove of $309. Assume in rural areas wood/brush could be left. With a 5% assumption vrs 3% and 3200 yard trees the cost would be 6.8M. Assume the acreage associated will cost in average of $400 per acre to maintain on a 3 year cycle.
10. 8: Assume emergency work is exempt. Would need to build data base with transmission lines and customer cross reference.

6 Training, recordkeeping and reporting

11. (A): Assume the intent is for Ameren to be redundant for all records that contractor is currently responsible for.
12. (B): Assume the intent is for Ameren to be redundant for all records that contractor is currently responsible for.
13. (C)1: In highly urban areas such as St. Louis City/County with over 1000 circuits and 100 plus municipals, can have one circuit go through multiple municipals, at times for very short distance. Could have no notify one municipal multiple times throughout the year. On items 1-5, depending on detail and reporting requirements could add substantial administrative time.
14. 3: AmerenUE presently tracks information on items 2-6 on crew timesheets however does not track by municipal. If present timesheets would not satisfied proposed standard, could add substantial administrative cost.
15. 8: Assume Ameren present process of supplying Staff with all next years circuit and miles is sufficient.
16. (D): Ameren presently supplies "all circuits and operating areas affected. See notes above-unsure of cost to associated all parts, of all circuits with municipals boundaries. Would be substantial administrative and software costs to report by municipals for information in C. This would involve a complete change in the way work is reported by crews and tracked.

Public notice of planned vegetation management

17. (A): Notification cost would be dependent on cycle length. Assume would need to notify 600,000 every year. If notification by post card figure on average 12 cents. Administrative cost unknown however figure one

person due to all supervisors time needed to coordinated all ongoing projects in order to notify within window given.
18. (D): Assume restoration and other unplanned trimming would be exempt. Similar concerns as above. Unsure of intent of how specific "locations of vegetation management" needs to be, however even a broad description will add substantial administrative cost. Unsure of meaning "easements rights".
(8) Outreach programs
19. (B): Assume this is an annual requirement and each year all electric customers must be notified, along with public entities. Assume this will be a separate mailing.
20. (C): Assume present web site with information meets this requirement.
(10) Specific Requirements
21. (A): Assume this requirement would require Ameren to trim the entire Distribution system(not Transmission) in 2 years. Assume the present clearance that Ameren has in place would be sufficient. Presently budget is at/above **45M** per year to trim urban circuits (7877 miles or 1969 per year) on 4 year cycle and rural circuits(13347 miles or 2224 per year on average. The "average" miles trimmed per year presently is **4193.** This standard would require 1/3 of entire system trimmed in first year or 2626 urban and **4449** rural miles or **7075** miles year one Mile increase from present to proposed would be an increased of 69%, the corresponding budget increase would be 27.2 M or **67.2M** in Year 1. Year 2 assume need to trim the remaining 2/3 of system, resulting in **54.4M** increase or **121.6M** Assume trained manpower locally or nationally would be available(not a valid assumption). Assume productivety of "additional crews" is the same. Did not figure any per diems for off system resources, generally increase cost by 20% per crew. Assume no major restorations efforts on system/off system to delay schedule.
22. (B): **Item 1**-Assume MPSC or other body would grant Ameren the rights to go off easement and assumed no legal claims resulting. Assume this voltage applies to 69kV lines estimated at 700 miles. Assume a cost to clear an additional 30' of ROW at $2000 per acre/windrowing all material. Annual maintenance cost based on 35% of 69kV existing as brush acres at $300 per acre for low volume foliar application on a 3 year cycle. **Item 2**-Seems to conflict with Item 3. **Item 3**-Assume present clearances. Assume this does not include neutral conductors. Assume this is on conductors rated greater than 600V only. Assume the present cycle cycle length would need to adjusted to 2 years to in effect have a "no contact rule" on urban and 3 years on rural lines along with hotspotting between cycles. At a minimum would be 2.5 times present budget or **112.5M**, could be as high as 4 times or **180M**. Similar crew assumptions as above. Costs figured seperate of section A.
23. 4.- Item 4-assume Ameren's present procedure of clearing all overhang on sub-transmission is sufficient with this proposed standard. Assume majority of pulling all overhang on 3 ph backbone will be in highly urban areas. Assume 5000 highly urban miles, 30% is classified backbone or 1500 miles. Assume additional cost of $15,000 above present clearances or $22.5M or 5.6M per year on a 4 year cycle. Assume no claims/litigation from causing tree fatalities or the need to completely remove trees after pulling overhang.
24. Range of Implementation costs-YR1-YR3: Unable to estimate all proposals. Figured the above proposed standards "separately", if more than one was done at once, could greatly increase cost on any additional proposals. The effect of Proposal A alone on the budget year to year is significant with going from 1/3 of system work in YR 1 and 2/3 in YR 2(and need to "repeat" thereafter".
25. Range of On going per year Compliance Cost: Unable to estimate all proposals. Figured the above proposed standards "separately", if more than one was done at once, could greatly increase cost on any additional proposals.
26. Range of AUE FTE: Assumed AUE FTE's could be in placed once any proposed standard goes into effect.
27. Range of Additional Crews Yr1, Yr2, Yr,3, ongoing: On all costs did not figure in use of off system tree crews which typically add 20% per diem. Assumed productivity of additional crews equal existing crews. Did not figure in wide fluctuations in workloads and crew.
28. **On all the above proposed clearances and standards assumed that Ameren would be granted the legal authority by MPSC or other entities, if proposed is beyond present rights. Assumed no legal**

challenges or claims would result. All proposed standard would need further clarification on the intent and analysis performed before final figures can be given.

Empire:
1. One-time start-up costs: 2 divisional centers, furniture, hardware/software. Office facilities for additional Vegetation Management personnel
2. Area Vegetation Managers/Supporting staff to adhere to requirements listed in the General Provisions section. Additional vegetation management personnel needed to manage as proposed in this regulation.
3. Biennial Distribution System Surveys and 24 Month Compliance Period Utility Line-Clearing. Costs associated with the functional portion of utility line-clearance from vegetation and biennial system vegetation surveying in accordance with the specifications listed in section 10(A).
4. Ongoing application costs associated with four-year maintenance cycle and mid-cycle trimming as needed. Reflects compliance to "No Contact" rules by mid=cycle trimming of cycle-busting trees. NOTE: 10 feet of separation is not possible due to right-of-way issues.
5. Development of new standards. Re-development of standards under which EDE operates to meet State regulation while adhering to all Regional/Federal transmission requirements vegetation management requirements.
6. Training, Recordkeeping and Reporting. The requirements of this proposed regulation would require additional personnel in the Vegetation Management department who would be responsible for the documentation of training, public education and outreach, production levels, immediate and future hazards, and reporting to MPSC.
7. Hazard tree Identification and elimination. No additional costs were added for hazard tree elimination; however, looking at other danger tree programs, upper level costs could easily exceed $100,000,000.
8. Storm related debris comment. Storm related debris could vary greatly from around $500,000 to well over $20,000,000 per major event depending on the interpretation of what is "storm related debris" and the size, severity and type of storm impacting the system.
9. Transmission administration and staff required to adhere to section 5 in addition to all other requirements herein while complying to Federal and Regional Requirements. Many key assumptions listed in the distribution sections of this proposed regulation also apply to the transmission section. EDE does not have right-of-way on portions of the transmission system to provide for the minimum 25 ft. clearance listed in section 10(B). These figures do not include the cost associated with either the purchase of additional right-of-way or the potential ensuing settlements, litigation costs, or trespass and loss of value lawsuits.
NOTE: Additional costs associated with storm debris removal and danger tree identification and elimination estimated from $500,000 to more than $120,000,000.

Aquila
1. Workload forecast based on 40% of the entire MO system requires tree maintenance.
2. Productivity based on a tree crew working 350 feet of vegetation per 8 hour work day.
3. The current average crew cost approximately $780 per 8 hour work day.
4. New clearance standards will require the 34.5 and 69kv to be maintained on a three year trim cycle.
5. Contract foresters would be employed to help plan the tree work and to help audit the completed work to ensure compliance of the new proposals. The cost of the contract foresters would be approximately $400,000 per year.
6. The line clearance notification letters and an annual tree education mailing sent to the electrical customers will cost approximately $1.00 per customer.
7. Our program, The Power of Trees and an annual Arbor Day celebration will cost approximately $60,000 per year. Aquila will use these programs to become a Tree Line USA utility sponsored by the Arbor Day Foundation.

8. The current database used to track productivity and tree inventory will require an upgrade. Software and IT costs will be approximately $35,000.
9. Most trees on the distribution system are not readily climbable and clearance can be reduced to something less than 10' per Aquila's current standards.
10. Note: If clearance is required to a minimum of 10' (readily climbable/hazard trees) a significant number of trees will have to be removed at an additional cost of approximately $14,760,000 over the first two years. This cost would not impact the following years.
11. Currently working an average of 164,000 trees per year. An additional 30% of those trees would require removal at approximately $300 per tree.
12. The legal ability to prune or remove trees outside the private or platted easements is a major concern. Most of the back-lot distribution easements are 5-7.5 feet on either side of the property line. Front-lot distribution lines are located at the edge of the street right of way. Utilities would need some sort of legislation that specifically grants us the right to obtain the clearances stated in the proposed rule.
13. The public and the local authorities will probably vehemently oppose the additional clearances stated in the proposed rule.
14. The removal of trees on the transmission system that grow taller than 15 feet may create additional unnecessary work. There are many "wire friendly" species growing on the right of way that mature in the 20-25 foot range.

Kansas City Power & Light
1. Costs expressed in 2007 dollars.
2. Additional insurance will be required of contractors and consultants working on the system.
3. Only 100,000 (34%) customers per year would experience storm damaged trees subject to utility pick-up requirements. 5 cubic yards per location.
4. 500,000 cubic yards of brush will need to be picked up annually following storms
5. Two-year cycle assumed for all distribution lines.
6. Removal of trees tall enough to fall on distribution lines that are diseased, dead or hazardous will be ongoing as tree conditions change over time.
7. Transmission clearing to be accomplished within the first two years with no reclearing anticipated thereafter.
8. No cost was estimated for tree removal outside existing transmission right-of-way
9. Additional record keeping and reporting will be required for: customer notification completed, training records of contractor personnel and annual report to the MOPSC