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.

PURPOSE: This rule sets forth requirements that electrical corporations shall follow in managing vegetation in proximity to an energized <u>distribution</u> conductor <u>and reporting requirements for transmission line vegetation management</u> in order to ensure public safety and the efficient and reliable supply of electric power. 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.

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(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.
- (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 <u>distribution</u> conductor means an electric circuit or equipment through which electricity is flowing or usually flows within the 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.
- (J) Major event means any of the following:
- 1. A sustained interruption of electric service that occurs during at least one major event day as defined in section 4.5, major event day classification, of IEEE Standard 1366-2003, IEEE Guide for Electric Power Distribution Reliability Indices, published May 14, 2004 and that results, 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,

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

Deleted: (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.¶

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- 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.
- (M) 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.
- (N) Tree means a perennial woody plant with a main trunk and branches forming a distinct elevated crown at a height exceeding eight feet (8') at maturity.
- (O) Vegetation means trees, shrubs and other woody plants.
- (P) 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 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.
- (O) Volts means nominal voltage levels, measured phase-to-phase.
- (S) 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 Energized Distribution Conductor Provisions
- (A) An electrical corporation shall ensure that vegetation management is conducted in accordance with this rulealong energized distribution conductors of six hundred (600) volts and higher, 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) Each electrical corporation, and its contractor(s), that utilize chemical or biological agents in vegetation management shall comply with any and all 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

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requirements of section (6).

- (E) Each electrical corporation shall ensure that <u>its employees</u>, and the workers of all contractors, hired to perform vegetation management <u>are informed</u>, 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 <u>it and</u> all contractors comply with each applicable requirement of this rule.
- (F) An electrical corporation that performs vegetation management at the request of a municipality, 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:
- 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;
- 2. The electrical corporation shall not suspend compliance with any requirement if the suspension would result in danger to the public; and
- 3. 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 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 reasonable steps to obtain any necessary permission from the property owner and remove or remedy the potential safety concern as promptly as possible. If the electrical corporation is denied access to property such that it cannot remove or remedy the potential safety concern, the electrical corporation shall notify the landowner denying access of this concern in writing. In response to a major event, the electrical corporation will only be required to remedy the potentially dangerous condition.

(3) Maintenance Cycles

(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

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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 Energized Distribution Conductor Standards.

(A) Each electrical corporation shall ensure that vegetation management conducted on its energized <u>distribution</u> 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 <u>which are incorporated</u> by reference and on file with the data center of the commission:

- 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. <u>American National Standard for Arboricultural Operations</u> Safety Requirements, 2006. This document, also known as ANSI Z133.1, is published by the American National Standards Institute:
- 6. National Electric Safety Code as referred to in 4 CSR 240-18.
- (B) Where the vegetation manager believes 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 standard, guideline or procedure with which the electrical corporation may most readily comply and make a filing with the commission, providing notice of the decision and the basis for it.
- (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

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- 7. Manual of woody landscape plants 5th Ed., by Michael A. Dirr. Stipes Publishing, LLC; 5th edition (August 1998):¶
- 8. Horius Third: A concise dictionary of plants cultivated in the United States and Canada, by L.H. Bailey Hortorium, 1976; and 10 concentrations of the concentration of the con

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- 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 April 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, <u>biological</u> 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:
- 3. 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; and
- 4 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.
- (5) Transmission Lines.
- (A) Each year, before June 1, each electrical corporation shall develop and file with the commission 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

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

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(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: ¶

- 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;
- 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 [6]

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within the boundaries of the municipality.

(B) Contemporaneous with submitting to the North American Electric Reliability Corporation (NERC) any transmission reliability report, each electrical corporation shall file a copy of the same report with the commission. Each electrical corporation shall timely file with the commission notice of any investigation initiated or remedial action taken by the NERC, an independent transmission system organization, or the Federal Energy Regulatory Commission (FERC) respecting said electrical corporation relating to transmission matters.

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(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.

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- (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;
- Identification of each circuit and substation where vegetation management was performed;

3. The type of vegetation management performed including removal, trimming and spraying:

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- 4. The crew size and supervisor's name;
- 5. The date of activity;
- 6. Any safety hazards encountered; and
- 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.
- (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 April 1 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 circuits and the name of each municipality in which the electrical corporation conducted vegetation management during the preceding year.
- (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

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provisions of this rule.

(7) Public Notice

- (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. This notice shall include the planned dates and locations of the pending vegetation management activities. In addition, the notice of pending vegetation management activities shall be in a form appropriate to each electrical corporation's procedures and easement rights. 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. This written notice is not required to occur more frequently than annually.

(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

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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;
- 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 vegetation management standards of this rule to the extent of:
- 1. No less than fifteen percent (15%) of the total vegetation management required by the twelve (12)-month anniversary of the adoption of this rule;
- 2. No less than forty percent (40%) of the total vegetation management required by the twenty-four (24)-month anniversary of the adoption of this rule;
- 3. No less than seventy percent (70%) of the total vegetation management required by the thirty-six (36) month anniversary of the adoption of this rule; and
- 3. One hundred percent (100%) compliance by the forty-eight (48) month anniversary of the adoption of this rule.
- To the degree legally permissible by any current easements or other legal authorization, at the time vegetation management is conducted, each electrical corporation shall provide the following minimum clearances of vegetation from conductors;
- 1. Fifteen feet (15') 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. For conductors energized at or below 35,000 volts, mature trees whose trunks and major limbs have sufficient strength and rigidity to prevent the trunk or limbs from encroaching within eighteen inches (18") of the conductor under reasonably foreseeable local wind and weather conditions are exempt from these minimum clearance requirements.
- 4. Subtransmission lines and three (3)-phase distribution feeders/backbone circuits (portion of distribution system directly interconnected with distribution substation and

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prior to the first protective device) shall be trimmed vertically to remove overhanging limbs to the widths prescribed in paragraphs (B)1. and 2, 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 when vegetation management is conducted, where practicable. Anticipated factors, such as but not limited to vegetation growth rates, must be considered in establishing minimum clearances at the time vegetation management is conducted. 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.

6. If an electrical corporation is not permitted to trim to the clearances required by this rule due to easement or other legal limitations, the electrical corporation shall trim to the greatest clearances permissible.

(C) In the time period between when vegetation management is conducted on a circuit, intrusion of limited small branches and new tree growth into the minimum clearance areas of paragraphs (10)(B)1. and 2. above is acceptable provided the vegetation does not come closer than six inches (6") from the conductor.

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(11) Variances

The Commission may grant a variance from a provision of this rule for good cause.

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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.

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(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.

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- (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.

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) 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.

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) 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.

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- (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).