

**BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI**

In the Matter of a Proposed )  
Rulemaking to Amend Commission )  
Rule 4 CSR 240-18.010. )

**Case No. EX-2017-0153**

**STAFF COMMENTS**

**COMES NOW** the Staff of the Missouri Public Service Commission ("Staff"), by and through its Office of Staff Counsel, and makes the following comments on the Commission's proposed amendment to rule 4 CSR 240-18.010:

1. This rulemaking proceeding to amend rule 4 CSR 240-18.010 started with Staff's November 29, 2016, motion proposing to update the portions of the edition of the *National Electric Safety Code* incorporated in the rule by reference from the 2012 edition, as modified by errata issued February 6, 2012 and April 29, 2014, to the 2017 edition, as modified by errata issued September 13, 2016.

2. During the pendency of this rulemaking proceeding, a subsequent errata to the 2017 edition of the *National Electric Safety Code* was issued on March 31, 2017. A copy of this errata is attached as Appendix A.

3. As it stated in its motion that initiated this rulemaking, the *National Electrical Safety Code* is the code to which utilities build their facilities, and Staff believes the Commission's rule 4 CSR 240-18.010 should be updated to incorporate references to the most recent version of *National Electrical Safety Code*. That rule should also reflect all of the errata to that most recent version as well; therefore, Staff recommends the Commission incorporate the most recent errata into the proposed amendment by adding the words "**and March 31, 2017**" after the

proposed change from [February 6, 2012 and April 29, 2013] to **September 13, 2016**" in the published proposed amendment.

4. Appended hereto as Appendix B is a version of the published proposed amendment to 4 CSR 240-18.010 showing with highlighting the change to that proposed amendment the Staff proposes the Commission should make.

**WHEREFORE**, Staff respectfully submits the foregoing comments to the Commission.

Respectfully submitted,

**/s/ Nathan Williams**

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#### **CERTIFICATE OF SERVICE**

I hereby certify that copies of the foregoing have been mailed, hand-delivered, transmitted by facsimile or electronically mailed to all counsel of record this 29<sup>th</sup> day of September, 2017.

**/s/ Nathan Williams**

# ***Errata to*** **2017 Edition** **National Electrical Safety Code®**

*Correction Sheet #2*  
**Issued 31 March 2017**

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This correction sheet may be freely reproduced and distributed in order to maintain the utility and currency of the underlying Standard. This correction sheet may not be sold, licensed, or otherwise distributed for any commercial purposes whatsoever. The content of this correction sheet may not be modified.

The following corrections should be made:

## **Part 1.** **Safety Rules for Electric Supply Stations**

### **Section 11.** **Protective arrangements in electric supply stations**

#### **110. General requirements**

*Change the last sentence of Rule 110A1 as follows:*

- A. Enclosure of equipment
  - 1. Types of enclosures

No fence or similar structure shall be allowed to be connected to or located within ~~2.8~~ 1.8 m (6.0 ft) of an electric supply station fence without the concurrence of the substation owner.

## **Part 2.**

# **Safety Rules for the Installation and Maintenance of Overhead Electric Supply and Communication Lines**

## **Section 23.**

### **Clearances**

#### **234. Clearance for wires, conductors, cables, and equipment from buildings, bridges, rail cars, swimming pools, and other installations**

*Change the cross reference in the last sentence of NOTE 2 of Rule 234E1 as follows:*

- E. Clearance of wires, conductors, cables, or unguarded rigid live parts installed over or near swimming areas with no wind displacement

- 1. Swimming pools

For portable wading pools, see Table ~~234-1~~ 232-1, row 5.

#### **235. Clearance for wires, conductors, or cables carried on the same supporting structure**

*Change the cross reference in Rule 235D as follows:*

- D. Diagonal clearance between line wires, conductors, and cables located at different levels on the same supporting structure.

No wire, conductor, or cable may be closer to any other wire, conductor, or cable than defined by the dashed line in ~~Table~~ Figure 235-1, where V and H are determined in accordance with other parts of Rule 235.

#### **236. Climbing space**

*Change the cross reference in the first sentence of Rule 236E as follows:*

- E. Climbing space between conductors

Climbing space between conductors shall be not less than the horizontal clearances specified in Table ~~235-6~~ 236-1.

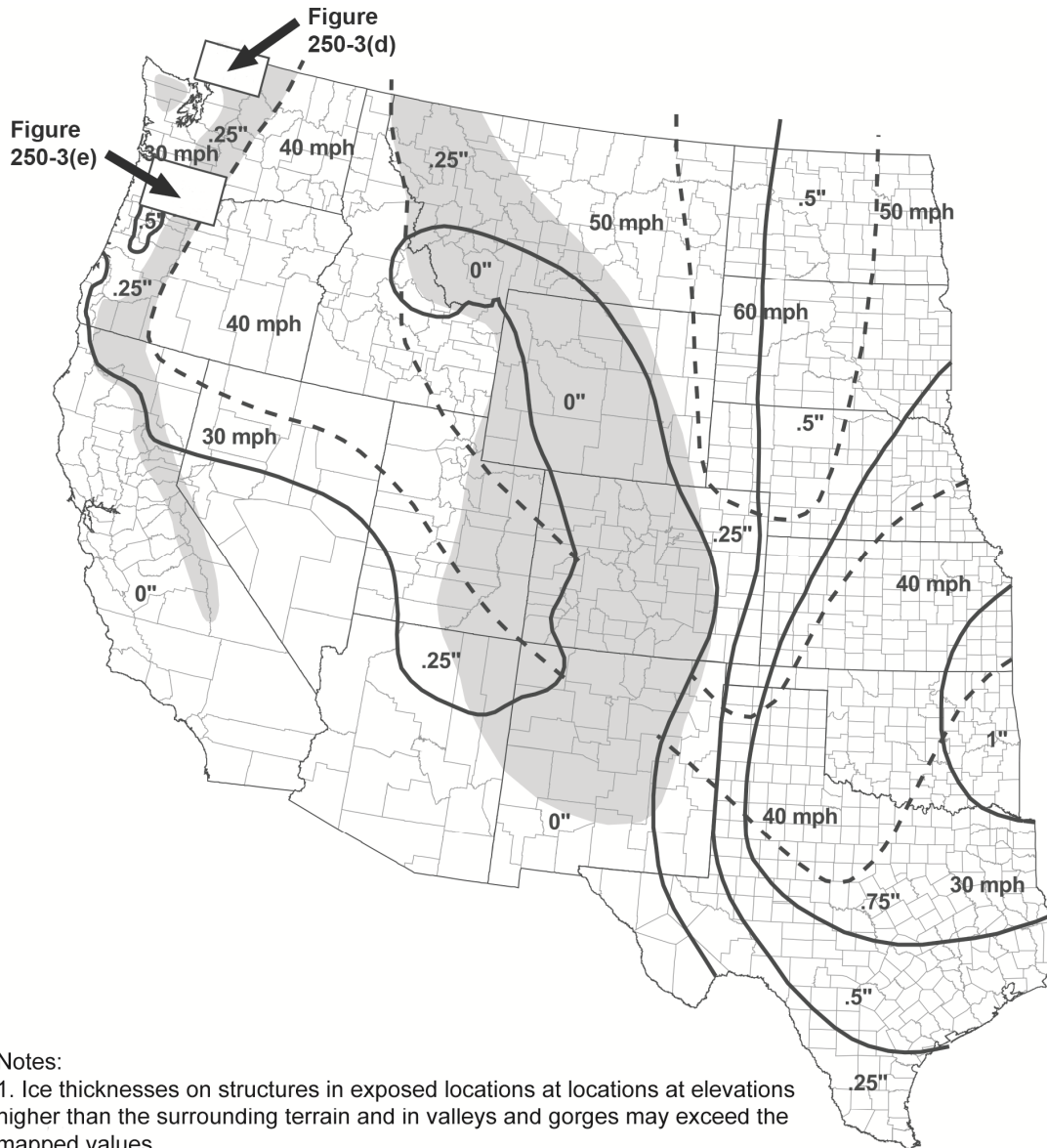
*Change the cross reference in Rule 236I as follows:*

- I. Climbing space near ridge-pin conductors

The climbing space specified in Table ~~235-6~~ 236-1 shall be provided above the top support arm to the ridge-pin conductor but need not be carried past it.

## Section 25. Loadings for Grades B and C

Replace Figure 250-3(a) through Figure 250-3(f) as follows:



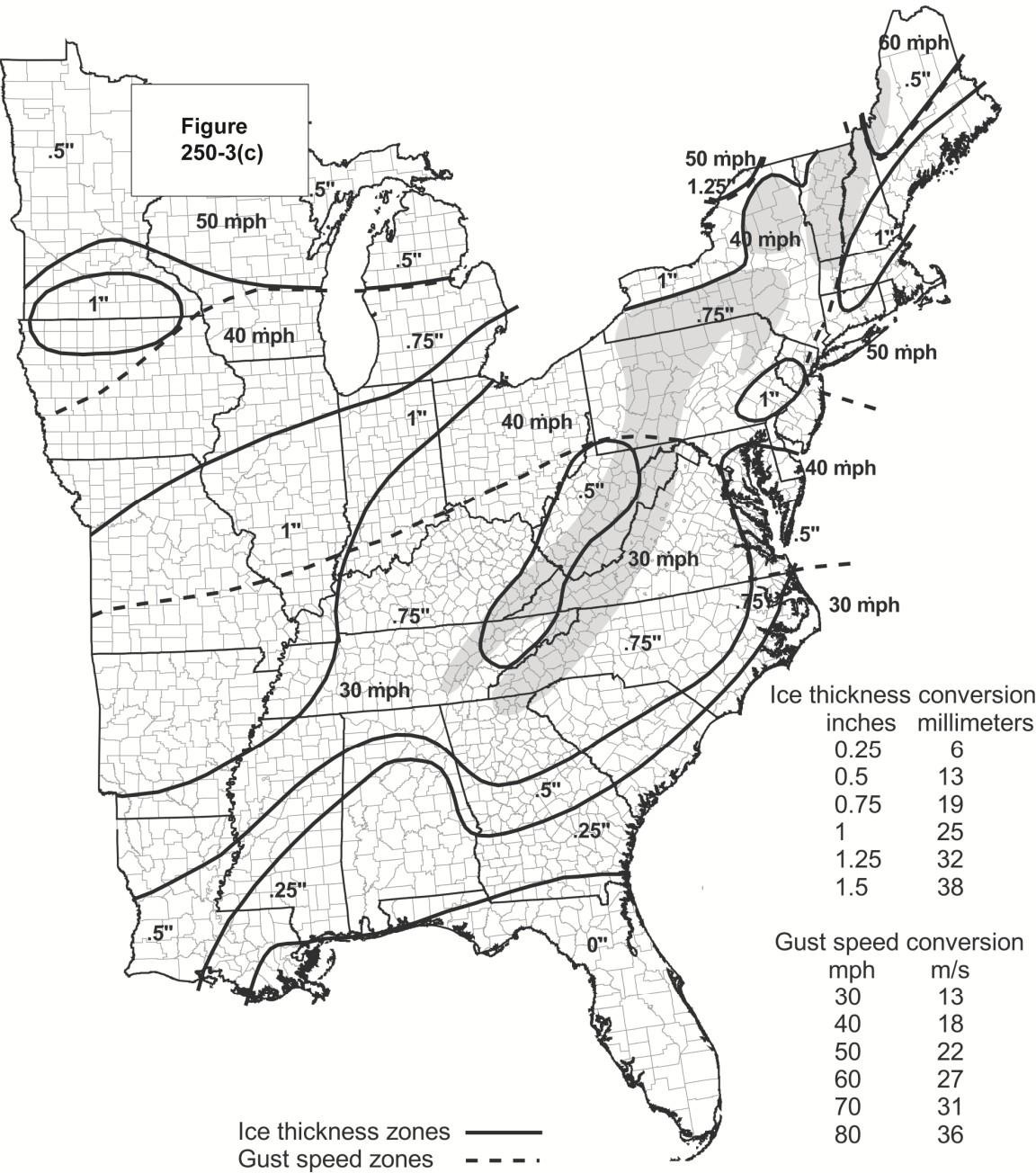
**Notes:**

1. Ice thicknesses on structures in exposed locations at locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.
2. In the mountain west, indicated by the shading, ice thicknesses may exceed the mapped values in the foothills and passes. However, at elevations above 5,000 ft, freezing rain is unlikely.
3. In the Appalachian Mountains, indicated by the shading, ice thicknesses may vary significantly over short distances.

**Equivalent Radial Ice Thicknesses Due to Freezing Rain with Concurrent 3-Seconds Gust Speeds, for a 50-Year Mean Recurrence Interval.**

**Figure 250-3(a)—Uniform ice thickness with concurrent wind**

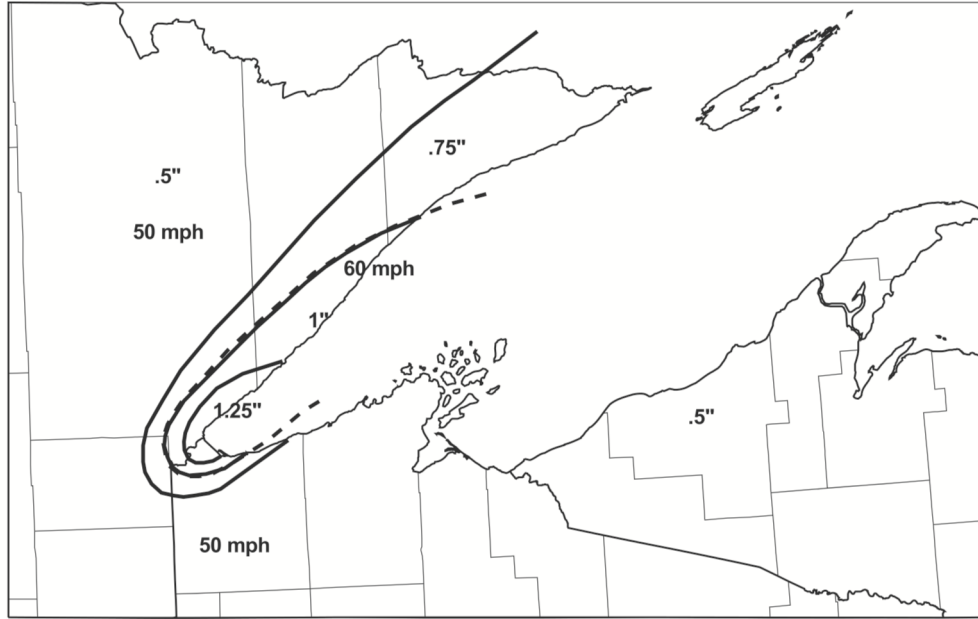
*NOTE:* Figure 250-3(a) reprinted with permission from ASCE, 1801 Alexander Bell Dr., Reston, VA 20191, from ASCE 7-10, Minimum Design Loads for Buildings and Other Structures. Copyright © 2010.



Equivalent Radial Ice Thicknesses Due to Freezing Rain with Concurrent 3-Seconds Gust  
Speeds, for a 50-Year Mean Recurrence Interval.

Figure 250-3(b)—Uniform ice thickness with concurrent wind

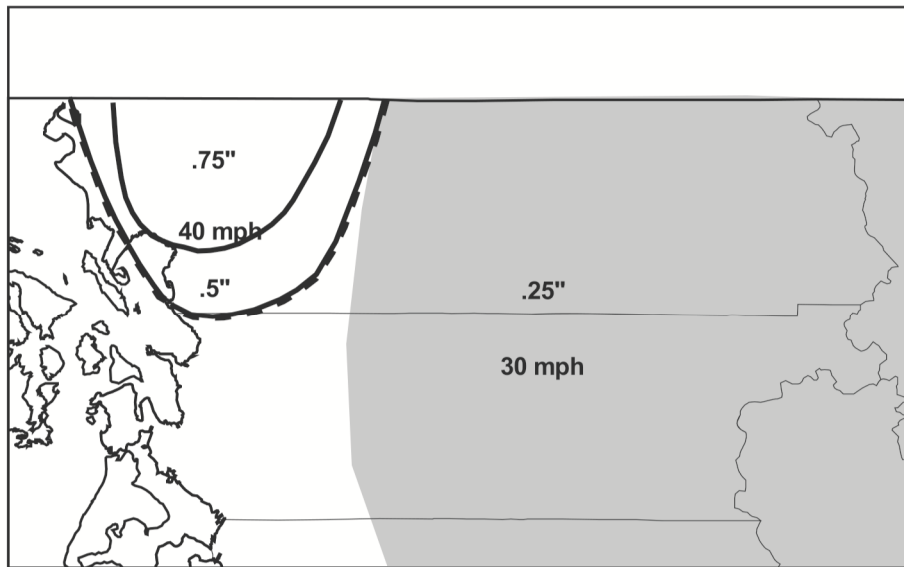
NOTE: Figure 250-3(b) reprinted with permission from ASCE, 1801 Alexander Bell Dr., Reston, VA 20191, from ASCE 7-10, Minimum Design Loads for Buildings and Other Structures. Copyright © 2010.



Lake Superior Detail.

**Figure 250-3(c)—Uniform ice thickness with concurrent wind**

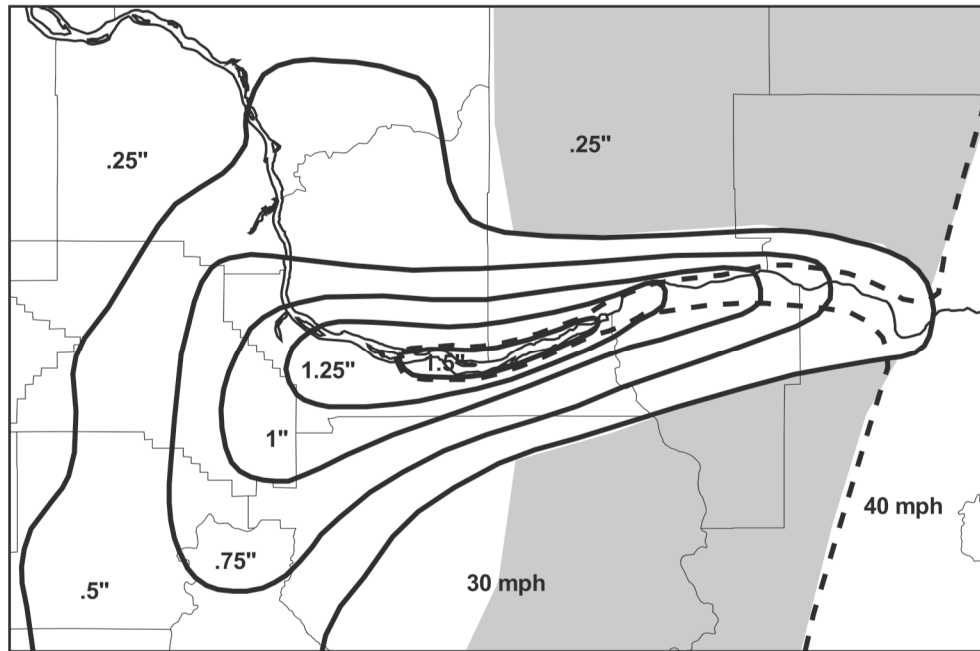
*NOTE:* Figure 250-3(c) reprinted with permission from ASCE, 1801 Alexander Bell Dr., Reston, VA 20191, from ASCE 7-10, Minimum Design Loads for Buildings and Other Structures. Copyright © 2010.



Fraser Valley Detail.

**Figure 250-3(d)—Uniform ice thickness with concurrent wind**

*NOTE:* Figure 250-3(d) reprinted with permission from ASCE, 1801 Alexander Bell Dr., Reston, VA 20191, from ASCE 7-10, Minimum Design Loads for Buildings and Other Structures. Copyright © 2010.

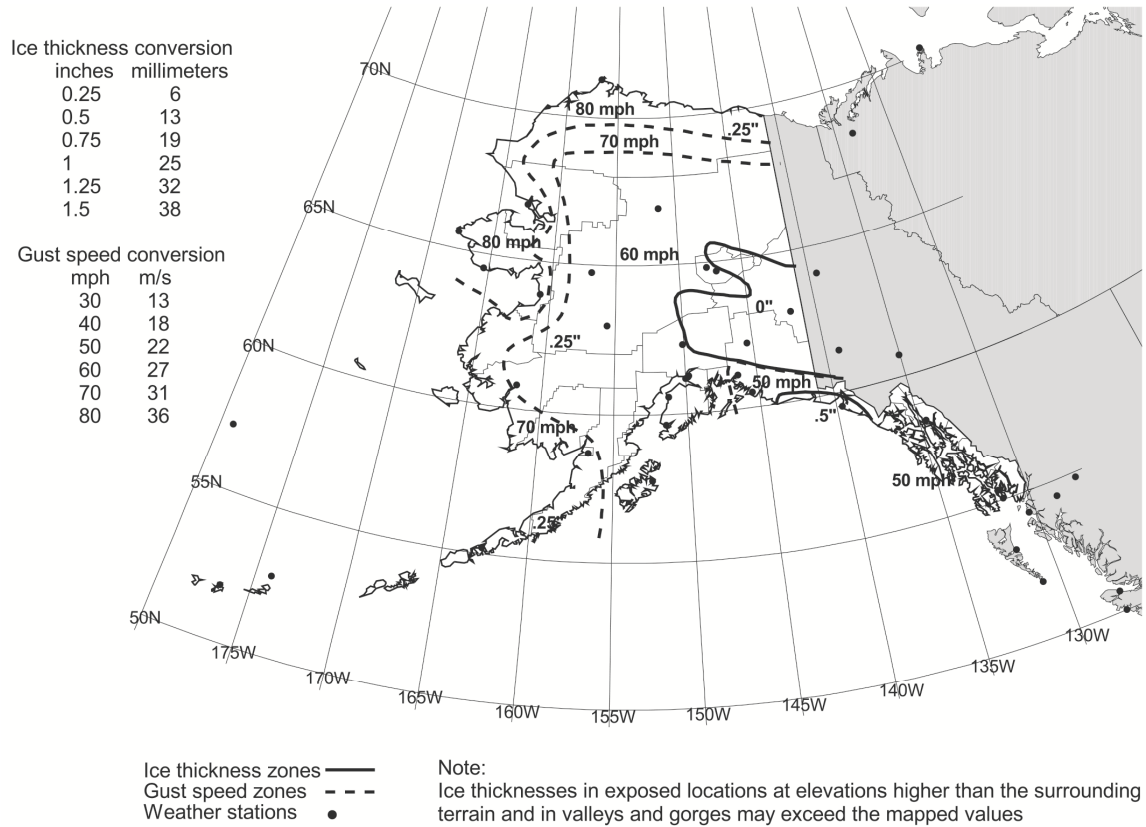


**Columbia River Gorge Detail.**

**Figure 250-3(e)—Uniform ice thickness with concurrent wind**

*NOTE:* Figure 250-3(e) reprinted with permission from ASCE, 1801 Alexander Bell Dr., Reston, VA 20191, from ASCE 7-10, Minimum Design Loads for Buildings and Other Structures. Copyright © 2010.





**50-Yr Mean Recurrence Interval Uniform Ice Thicknesses Due to Freezing Rain with Concurrent 3-Second Gust Speeds: Alaska.**

**Figure 250-3(f)—Uniform ice thickness with concurrent wind**

*NOTE:* Figure 250-3(f) reprinted with permission from ASCE, 1801 Alexander Bell Dr., Reston, VA 20191, from ASCE 7-10, Minimum Design Loads for Buildings and Other Structures. Copyright © 2010.

## Section 26. Strength requirements

### 261. Grades B and C construction

- A. Supporting structures
  - 2. Wood structures

*Change the text of condition (c) in EXCEPTION 3 of Rule 261A2a as follows:*

- (c) The angle structure has sufficient strength to withstand, without guys, the transverse loading of Rule 252 multiplied by the appropriate load factors in Table 253-1 or ~~253-2~~, which would exist if there were no angle at that structure without exceeding the permitted stress level.

## **Part 4.**

### **Work Rules for the Operation of Electric Supply and Communication Lines**

#### **Section 43.**

##### **Additional rules for communications employees**

##### **431. Approach to energized conductors or parts**

*Change the cross reference in Rule 431B as follows:*

B. Altitude correction

The distances in Table 431-1 shall be used at elevations below 3600 m (12 000 ft). Altitude correction factors as indicated in Table ~~441-3~~ 441-6 shall be applied above that altitude. Altitude correction factors shall be applied only to the electrical component of the minimum approach distance.

#### **Section 44.**

##### **Additional rules for supply employees**

##### **441. Energized conductors or parts**

*Change Rule 441A1c as follows:*

A. Minimum approach distance to energized lines or parts

1. General

- c. The energized line or part is insulated from the employee and from any other line or part at a different voltage. Insulated lines and parts include those covered with suitable insulation and having metallic shield, sheath, or concentric neutral or semiconducting shield in combination with suitable metallic drainage bonded to an effective ground.

##### **446. Energized conductors or parts**

*Change the second paragraph of Rule 446 as follows:*

The distances specified in Table 441-1 ~~or Table 441-2~~ through Table 441-5 shall be maintained from all grounded objects and from other conductors, lines, and equipment having a potential different from that to which conductive equipment and devices are bonded in order to maintain the equipotentially energized work environment in an isolated state.

*Change the second paragraph of Rule 446C as follows:*

- C. When working on insulators under live-line procedures, the clear insulation distance shall be not less than the distances required by Table 441-1 ~~and Table 441-2~~ through Table 441-5.

**Title 4—DEPARTMENT OF ECONOMIC DEVELOPMENT**  
**Division 240—Public Service Commission**  
**Chapter 18—Safety Standards**

**PROPOSED AMENDMENT**

**4 CSR 240-18.010 Safety Standards for Electrical Corporations, Telecommunications Companies and Rural Electric Cooperatives**

*Purpose: This amendment changes the edition of the National Electrical Safety Code that the Public Service Commission adopts for the minimum safety standards applicable to electrical corporations, telecommunications companies and rural electric cooperatives, and clarifies that the new standards apply only to new installations and extensions.*

**PURPOSE:** This rule prescribes minimum safety standards relating to the operation of electric utilities, telecommunications companies, and rural electric cooperatives. Adoption of this rule will [not only] inform the utilities of the minimum safety standards required by the commission and will be of assistance to the commission staff in carrying out its assigned duties.

**PUBLISHER’S NOTE:** The secretary of state has determined that the publication of the entire text of the material which is incorporated by reference as a portion of this rule would be unduly cumbersome or expensive. This material as incorporated by reference in this rule shall be maintained by the agency at its headquarters and shall be made available to the public for inspection and copying at no more than the actual cost of reproduction. This note applies only to the reference material. The entire text of the rule is printed here.

(1) The minimum safety standards relating to the operation of electrical corporations, telecommunications companies, and rural electric cooperatives are Parts 1, 2, and 3 and Sections 1, 2, and 9 of the *National Electrical Safety Code* (NESC); [2012] **2017** Edition as approved by the American National Standards Institute on [August 1, 2011] **August 1, 2016**, as modified by Errata thereto issued on [February 6, 2012 and April 29, 2013] **September 13, 2016 and March 31, 2017**, and published by the Institute of Electrical and Electronics Engineers, Inc., 3 Park Avenue, New York, NY 10016-5997. The NESC is composed of four (4) different parts and four (4) sections, each of which pertain to different aspects of the electric and telecommunications industries. Part 1 specifies rules for the installation and maintenance of equipment normally found in electric generating plants and substations. Part 2 pertains to safety rules for overhead electric and communication lines. Part 3 contains safety rules for underground electric and communication lines. Section 1 is an introduction to the NESC, Section 2 defines special terms, and Section 9 requires certain grounding methods for electric and communications facilities. The full text of this material is available at the Energy Analysis Section of the Utility Operations Department of the Public Service Commission, Suite 700, 200 Madison, Jefferson City, Missouri. This rule does not incorporate any subsequent amendments or additions.

(2) Electrical corporations, telecommunications companies, and rural electric cooperatives subject to regulation by this commission pursuant to Chapters 386, 392–394, RSMo 2000 shall comply with the safety standards established by this rule for new installations and extensions as described in the NESC.

(3) Incident reporting requirements for electrical corporations and rural electric cooperatives are found in 4 CSR 240-3.190(4).

(4) Those who excavate near underground facilities or conduct activities within ten feet (10') of overhead power lines are required to notify area utilities prior to engaging in such action, pursuant to the Underground Facility Safety and Damage Prevention Act, section 319.010 et seq., RSMo 2000, and the Overhead Power Line Safety Act, section 319.075 et seq., RSMo 2000.

*AUTHORITY: sections 386.310 and 394.160, RSMo 2000. \* Original rule filed March 15, 1978, effective Oct. 2, 1978. Amended: Filed April 8, 1981, effective Oct. 15, 1981. Amended: Filed Feb. 9, 1984, effective June 15, 1984. Amended: Filed June 12, 1987, effective Sept. 15, 1987. Amended: Filed Jan. 5, 1990, effective April 13, 1990. Amended: Filed March 23, 1993, effective Oct. 10, 1993. Amended: Filed Aug. 27, 1999, effective Feb. 29, 2000. Amended: Filed Oct. 14, 2003, effective April 30, 2004. Amended: Filed May 2, 2008, effective Nov. 30, 2008. Amended: Filed April 2, 2012, effective Feb. 28, 2014; **Amended: Filed Month/Day, 2016, effective Month/Day, 2017***

*\*Original authority: 386.310, RSMo 1939, amended 1979, 1989, 1996 and 394.160, RSMo 1939, amended 1979.*

**PUBLIC COST:** *This proposed rule will not cost state agencies or political subdivisions in excess of \$500.00 in total.*

**PRIVATE COST:** *This proposed rule will not cost private entities in excess of \$500.00 in total.*

**NOTICE TO SUBMIT COMMENTS AND NOTICE OF PUBLIC HEARING:** *Anyone may file comments in support of, or in opposition to, this proposed rule with the Missouri Public Service Commission, Morris L. Woodruff, 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 Month/Day/Year, and should include a reference to Commission Case No. EX-2017-####. 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 Month/Day/Year, at Time, in Room #### of the Governor Office Building, 200 Madison St., 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 or TDD Hotline 1-800-829-7541.*