Chapter E 122

RELATIONS BETWEEN VARIOUS CLASSES OF LINES

E 122.01 Relative levels. (1) STANDARDIZATION OF LEVELS. The levels at which different classes of conductors are to be located should be standardized where practicable for any given community by agreement of the utilities concerned.

Note: This practice facilitates the extension of lines and promotes the safety of the public and workers by permitting the relative levels and required clearances to be readily obtained on jointly or commonly used poles as well as at crossings and conflicts.

(2) RELATIVE LEVELS—supply and communication conductors.

(a) *Preferred levels.* Where supply and communication conductors cross each other or are in conflict, or are located on the same poles or towers, the supply conductors shall preferably be carried at the higher level.

1. Exception: This does not apply to trolley feeders which may be located for convenience approximately at the level of the trolley contact conductor.

Note: Supply lines generally use larger conductors than communication lines so there is less liability of contact between the two if the supply conductors are located in the upper position. This relative location also avoids the necessity of workmen on communication conductors passing through supply conductors and working above them and avoids the necessity of increasing the grade of construction required for communication conductors.

(b) *Minor extensions.* In localities where the practice of placing conductors of communication circuit for public use above supply conductors has been generally established, minor extensions may be made in either system, keeping the conductors in the same relative position. These extensions should not continue beyond a location at which it becomes practicable to change to the arrangement standardized by these orders.

(c) *Special construction for supply circuits, the voltage of which is 550 volts or less and carrying power not in excess of 3,200 watts.* Where all circuits are owned or operated by one party or where cooperative consideration determines that the circumstances warrant and the necessary coordinating methods are employed, single-phase alternating-current or 2-wire direct-current circuits carrying a voltage of 550 volts or less, with transmitted power not in excess of 3,200 watts,

when involved in the joint use of poles with communication circuits, may be installed in accordance with footnote of table 1 in subsection E 123.03(1), and footnote (a) of table 11 in section E 123.09 (1), under the following conditions:

1. That such supply circuits are of wire having a good grade of commercial double-braid weatherproof covering not smaller than No. 8 AWG medium hard-drawn copper or its equivalent in strength, and the construction otherwise conforms with the requirements for supply circuits of the same class.

2. That the supply circuits be placed on the end and adjacent pins of the lowest through signal crossarm and that a 30-inch climbing space be maintained from the ground up to a point at least 24 inches above the supply circuits. The supply circuits shall be rendered conspicuous by the use of insulators of different form or color from others on the pole line or by stenciling the voltage on each side of the crossarm between the pins carrying each supply circuit, or by indicating the voltage by means of metal characters.

3. That there shall be a vertical clearance of at least 2 feet between the crossarm carrying these supply circuits and the next crossarm above. The other pins on the crossarm carrying the supply circuits may be occupied by communication circuits used in the operation or control of a signal system or other supply system if owned, operated and maintained by the same company operating the supply circuits.

4. That such supply circuits shall be equipped with arresters and fuses installed in the supply end of the circuit and where the signal circuit is alternating current, the protection shall be installed on the secondary side of the supply transformer. The arresters shall be designed so as to break down at approximately twice the voltage between the wires of the circuit, but the break-down voltage of the arrester need not be less than 1,000 volts. The fuses shall have a rating not in excess of approximately twice the maximum operating current of the circuit, but their rating need not be less than 10 amperes. The fuses likewise shall in all cases have a rating of at least 600 volts, and where the supply transformer is a step-down transformer, shall be capable of opening the circuit successfully in the event the transformer primary voltage is impressed upon them.

5. Such supply circuits when enclosed in effectively grounded metal-sheathed cable, or other cables carried on effectively grounded messenger, may be carried on a pole below communication attachments, with not less than 2 feet vertical separation between the supply cable and the lowest communication crossarm. Communication circuits other than those used in connection with the operation of the supply circuits shall not be carried in the same cable with such supply circuits.

6. Where such supply conductors are carried below communication conductors, transformers and other apparatus associated therewith shall be attached only to the sides of the crossarm in the space between and at no higher level than, such supply wires.

7. Lateral runs of such supply circuits carried in a position below the communication space shall be protected through the climbing space by wood molding or equivalent covering, or shall be carried in multiple-conductor cable having a suitable substantial insulating covering,

and such lateral runs shall be placed on the under side of the crossarm.

(3) RELATIVE LEVELS; SUPPLY LINES OF DIFFERENT VOLTAGE CLASSIFICATIONS (as classified in table 11). (a) *At crossings or conflicts.* Where supply conductors of different voltage classifications cross each other or are in conflict, the higher-voltage lines shall preferably be carried at the higher level.

(b) *On poles used only by supply conductors.* Where supply conductors of different voltage classifications are on the same poles, relative levels should be as follows:

1. Where all circuits are owned by one utility, the conductors of higher voltages should generally be placed above those of lower voltage.

Note: These relative levels will often avoid the necessity of increasing the grade of construction for crossarms, pins, and conductor fastenings of the lower voltage conductors.

2. Where different circuits are owned by separate utilities, the circuits of each utility may be grouped together and one group of circuits may be placed above the other group provided that the circuits in each group are located so that those of higher voltage are at the higher levels and that either of the following conditions is met:

3. A vertical spacing of not less than 4 feet (or 6 feet where required by table 11, section E 123.09 (1)), is maintained between the nearest line conductors of the respective utilities (this space to be identified if necessary as a division space).

(c) *Conductors of a lower voltage classification.* Conductors of a lower voltage classification are at a higher level than those of a higher classification only where on the opposite side of the pole.

History: Cr. Register, January, 1968, No. 145, eff. 2–1–68.

E 122.02 Avoidance of conflict and cooperation to avoid hazard. (1) Two parallel pole lines, either of which carries supply conductors, shall where practicable be so separated from each other that neither conflicts with the other. If this is impracticable, then the conflicting line or lines shall be built of the grade of construction required by Wis. Adm. Code chapter E 124 for a conflicting line or the 2 lines shall be combined in a single pole line.

(2) Under certain circumstances the proximity of supply lines to communication circuits may produce undesirable effects which may become hazardous. Because of the varied nature of the influence it is difficult to define limits of voltage, parallelism, etc., which will apply in all cases, but by means of cooperation between the supply and communication interests, the companies themselves can doubtless work out the problem in such a way that a serious hazard will not result. In order to aid in keeping these effects at a minimum, it is expected that the utilities or parties responsible for the extension or change of electric or communication facilities will cooperate by notifying each other of contemplated extensions; or changes in location, operation, or voltage. All the utilities or companies affected should determine in conference just what limits of line characteristics, separation and parallelism will be allowed without notification to each other. However in the absence of such an agreement any company before building a line

within 500 feet of the line of other companies shall give notice to all companies having lines within the given distance. Such notices will give all companies the opportunity to take such steps for the protection of their property as the law provides.

History: Cr. Register, January, 1968, No. 145, eff. 2–1–68.

E 122.03 Joint use of poles by supply and communication circuits. (1) ADVANTAGES. Joint use of poles under suitable conditions and with certain types of circuits offers many advantages and promotes safety.

(2) COOPERATIVE STUDY. Joint use involves contractual relations between utilities, consideration of service requirements, and economics as well as safety. It, therefore, requires cooperative study by the utilities concerned.

(3) CONDITIONS UNDER WHICH JOINT USE IS DESIRABLE. In the case of local or distribution circuits along the same highway or similar right of way, where, under the provisions of chapter E 124 applying to joint use, grade C construction or less would be required, joint use is generally preferable to separate pole lines unless the number of conductors is very large or the character of the circuits makes joint use undesirable. Where circuits other than those mentioned above are involved, the choice between joint use of poles and separate pole lines shall be determined through cooperative consideration, by the utilities concerned, of all the factors involved, including the character of circuits, the total number and weight of conductors, tree conditions, number and location of branches and service drops, availability of right of way, etc. Where such joint use is mutually agreed upon, it shall be subject to the appropriate grade of construction as specified in chapter E 124. Where such joint use is not employed, separate lines as specified in section E 122.04 shall be used. In any event, joint use is preferable to separate lines where it would be impracticable to avoid an overbuilt conflict with separate lines.

History: Cr. Register, January, 1968, No. 145, eff. 2–1–68.

E 122.04 Separate pole lines. Where 2 separate pole lines are to be used, one of which carries supply conductors and the other communication conductors, they shall be separated, if practicable, so that neither conflicts with the other, but if within conflicting distance, they shall be separated as far as practicable and shall be built of the grade of construction required by chapter E 124.

History: Cr. Register, January, 1968, No. 145, eff. 2–1–68.

E 122.05 Approval of conflicts and joint use of facilities. The following section of the Wisconsin Statutes applies to the joint use of facilities. The Public Service Commission also has other orders, not included in this code or referred to in the following section of the statutes, which require certain lines and construction projects to be approved.

196.04 Facilities granted other utilities; physical telephone connections; petition; investigation. (1) Every public utility and every person having conduits, subways, poles, towers, transmission wires or other equipment on, over or under any street or highway, shall for a reasonable compensation, permit the use of the same by any public utility, whenever public convenience and necessity require such use, and such use will not result in irreparable injury to the owner or other users of such equipment, nor in any substantial detriment to the service to be rendered by such owners or other users; and every utility for the conveyance of telephone messages shall permit physical connections

to be made, and telephone service to be furnished, between any telephone system operated by it, and the telephone toll line operated by another such public utility, or between its toll line and the telephone system of another such public utility, or between its toll line and the toll line of another such public utility, or between its telephone system and the telephone system of another such public utility, whenever public convenience and necessity require such physical connections, and such physical connections will not result in irreparable injury to the owners or other users of the facilities of such public utilities, nor in any substantial detriment to the service to be rendered by such public utilities. The term "physical connections," as used in this section, shall mean such number of trunk lines or complete wire circuits and connections as may be required to furnish reasonably adequate telephone service between such public utilities.

(2) In case of failure to agree upon such use or the conditions or compensation for such use, or in case of failure to agree upon such physical connections, or the terms and conditions upon which the same shall be made, any public utility or any other person interested may apply to the commission, and if after investigation the commission shall ascertain that public convenience and necessity require such use or such physical connections, and that such use or such physical connections would not result in irreparable injury to the owner or other users of such equipment or of the facilities of such public utilities, nor in any substantial detriment to the service to be rendered by such owner or such public utilities or other users of such equipment or facilities, it shall by order direct that such use be permitted and prescribe reasonable conditions and compensation for such joint use, and that such physical connections be made, and determine how and within what time such connections shall be made, and by whom the expense of making and maintaining such connections shall be paid.

(3) Such use so ordered shall be permitted and such physical connections so ordered shall be made, and such conditions and compensation so prescribed shall be the lawful conditions and compensation for such use, and the lawful terms and conditions upon which such physical connections shall be made, observed, followed and paid. Any such order may be, from time to time, revised by the commission.

(4) Provided the parties cannot agree and the commission finds that public convenience and necessity or the rendition of reasonably adequate service to the public requires that a public utility should be permitted to extend its lines on, over or under the right of way of any railroad, or requires that the tracks of any railroad should be extended on, over or under the right of way of any public utility, the commission is empowered to order such extension by said public utility or railroad on, over or under the right of way of the other when it will not materially impair the ability of the railroad or utility, on, over or under whose right of way such extension would be made, to serve the public. Such use so ordered shall be permitted upon such conditions and such compensation as the commission shall deem equitable and reasonable in the light of all the circumstances, which conditions and compensation so prescribed shall be the lawful conditions and compensation for such use and the lawful terms and conditions upon which such use shall be made, observed, followed and paid.

History: Cr. Register, January, 1968, No. 145, eff. 2–1–68.

E 122.06 Construction near airports. When any portion of a contemplated overhead line or structure will be at a greater height above the level of an existing airport or water surface used for landing than one-fiftieth of the distance from the boundary of such site, the owner or users and the division of aeronautics shall be notified. The division of aeronautics will supply maps showing the location of prospective and existing publicly-owned airport sites and information relative to their development.

Note: It is recommended that a reasonable effort be made to determine if private airports are contemplated in the area where the construction will be located.

History: Cr. Register, January, 1968, No. 145, eff. 2–1–68.