CHAPTER 5

ELECTRIC

Authority

N.J.S.A. 48:2–13.

Source and Effective Date

R. 1991 d.583, effective December 2, 1991
See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).

Executive Order No. 66(1978) Expiration Date

Chapter 5, Electric, expires on December 2, 1996.

Chapter Historical Note

Chapter 5, Electric, was filed and became effective prior to September 1, 1969. Subchapter 4, Regulation for Residential Electric Underground Extensions, was filed and became effective December 31, 1971 as R.1971 d.183. See: 1 N.J.R. 9(a), 3 N.J.R. 277(c). Subchapter 7, was filed and became effective April 19, 1973 as R.1973 d.106. See: 4 N.J.R. 134(c), 5 N.J.R. 167(a). Subsequent revisions to Subchapter 7 were filed and became effective January 21, 1975, as R.1975 d.12. See: 5 N.J.R. 353(a), 7 N.J.R. 62(b). Subchapter 7 was deleted and the deletion was filed and became effective February 17, 1977 d.37. See: 9 N.J.R. 139(a). Subchapter 3, expired April 23, 1984 and was adopted as a new rule pursuant to Executive Order No. 66(1978) as R.1985 d.625 effective December 16, 1985. See: 17 N.J.R. 2237(a), 17 N.J.R. 2998(a). Chapter 5 expired on December 16, 1990 pursuant to Executive Order No. 66(1978), Chapter 5 was proposed and adopted as new rules, R.1991 d.583, effective December 2, 1991. See: Source and Effective Date.

Public Notice: Restructuring of electric power industry. See: 27 N.J.R. 2634(a).

See section level annotations for specific rulemakings.

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SUBCHAPTER 1. PLANT

14:5–1.1 Plant construction

The construction and installation of plant and facilities of electric utilities must be in accordance with N.J.A.C. 14:3–2.1 and, except with respect to the protection and separation of conductors buried in earth, must be in accordance with the applicable requirements of the National Electrical Code and the National Electrical Safety Code in effect at the time of construction. When and if any controversy arises as to the necessity for adopting specifications calling for construction of a higher standard, the matter may be referred to the Board for determination.

Case Notes

Electric utility practiced prudent field management in choosing site for proposed distribution substation. In Matter of Appeal of Atlantic City Electric Company, 93 N.J.A.R.2d (BRC) 75.

14:5–1.2 Separation and protection of conductors buried in earth

(a) The separation between buried communication and buried supply conductors or cables shall consist of not less than 12 inches of well-tamped earth, four inches of brick or three inches of concrete.

(b) Exceptions to (a) above are as follows:

1. This separation and protection is not required where supply circuits having a potential of 550 volts or less between conductors and having a total transmitted power of not in excess of 3,200 watts are laid adjacent to communication cables, if all cables are used exclusively for the operation of a railway signal or supply system and are maintained by the same company.

2. This separation and protection is not required where supply circuits have a potential of 550 volts or less between conductors.

3. This separation and protection is not required where communication and power supply conductors or cables which have a potential of over 550 volts between conductors are buried in a common trench at the same depth with random separation under the following conditions:

i. The electric system shall be wye connected with grounded neutral and a voltage not exceeding 22,000 volts to ground;

ii. The power cables shall have a concentric solidly grounded neutral. When there is no covering over the concentric neutral, grounding may be by direct burial in earth; otherwise ground rods shall be driven at all cable terminations or a separate bare copper grounding conductor not smaller than # 4A.W.G. shall be buried in the earth not more than three inches from the power cable. All neutral and grounding conductors shall be interconnected at all power cable terminations. The power cables shall meet or exceed the test requirements of the Insulated Power Cable Engineers Association—National Electrical Manufacturers Association standards for cables for transmission and distribution of electrical energy;

iii. The communication cable shall contain a metallic sheath bonded to the electric system grounded neutral at intervals of not more than 1,000 feet.

4. No separation is required between communication and supply conductors or cables located beneath transformer switch and terminal cabinets or their supporting pads or structures.

As amended, R.1975 d.215, effective July 28, 1975.
See: 7 N.J.R. 277(a), 7 N.J.R. 437(a).
Amended by R.1991 d.583, effective December 2, 1991.
See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).
Editorial or stylistic change only.

Cross References

Fault protection of buried cables, see N.J.A.C. 14:5–1.5.

14:5–1.3 Protection at crossings of cables

(a) At all crossings where buried supply conductors or cables are above communication conductors or cables, the supply conductors or cables shall be protected from digging operations by concrete or creosoted wood plank or equivalent mechanical protective covering extending at least two feet in each direction from the point of crossing.

(b) Exceptions to (a) above are as follows:

1. This separation and protection is not required where supply circuits having a potential of 550 volts or less between conductors and having a total transmitted power of not in excess of 3,200 watts are laid adjacent to communication cables, if all cables are used exclusively for the operation of a railway signal or supply system and are maintained by the same company.

2. This protection is not required where supply conductors over 550 volts between conductors are installed in accordance with N.J.A.C. 14:5–1.2(b)3.

Amended by R.1991 d.583, effective December 2, 1991.
See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).
Editorial or stylistic change only.

14:5–1.4 Protection of cables installed parallel

(a) Where buried communication and buried supply conductors or cables are installed in the same trench generally parallel to each other, the buried supply conductors or cables shall be covered with concrete or creosoted wood planking or equivalent mechanical protection, except that this covering may be omitted in the following cases:

1. Where the voltage of the supply conductors does not exceed 550 volts between conductors;

2. Where the supply conductors or cables are encased in a continuous metallic sheath effectively grounded;

3. Where the supply conductors or cables are installed more than two feet horizontally from communication conductors;

4. Where supply conductors over 550 volts between conductors are installed in accordance with N.J.A.C. 14:5–1.2(b)3.

(b) This separation and protection is not required where supply circuits having a potential of 550 volts or less between conductors and having a total transmitted power of not in excess of 3,200 watts are laid adjacent to communication cables, if all cables are used exclusively for the operation of a railway signal or supply system and are maintained by the same company.

Amended by R.1991 d.583, effective December 2, 1991.
See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).
Editorial or stylistic change only.

14:5–1.5 Fault protection

Where buried communication and power supply conductors of 550 volts or more between conductors are installed in the same trench without separation and in accordance with the requirements of N.J.A.C. 14:5–1.2, the cable shall be protected by devices capable of clearing phase to ground faults.

Amended by R.1991 d.583, effective December 2, 1991.
See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).
Editorial or stylistic change only.

i. Meters without demand register—at least once in 16 years;

ii. Meters with block-interval demand registers—at least once in 12 years;

iii. Meters with lagged demand registers—at least once in eight years.

2. Self-contained single-phase meters and three-wire network meters—at least once in eight years or by a variable interval or statistical sampling technique approved by the Board.

As amended R.1979 d.374, effective September 5, 1979.
See: 11 N.J.R. 402(c), 11 N.J.R. 585(c).
Amended by R.1991 d.583, effective December 2, 1991.
See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).
Editorial or stylistic change only.

14:5–3.3 Determination of electric meter accuracy

(a) No meter that has an error in registration of more than plus or minus two percent shall be placed in service or allowed to remain in service without adjustment.

(b) No meter which registers upon "no load" shall be placed in service or allowed to remain in service. To determine that a meter is registering upon "no load", all load wires shall be removed, and if the meter disk then rotates at the rate of one revolution in five minutes or less it shall be considered as registering on "no load".

(c) For periodic testing, the accuracy shall be determined by taking the average of the percentage registration at light load and heavy load. In periodic testing where the average accuracy shows the meter to be in error by more than two percent, the complaint testing method as stated below shall be used to determine the final accuracy of the meter.

(d) As used in this section, light load shall be approximately five to ten percent of rated current and heavy load shall be not less than 60 percent nor more than 150 percent of rated current.

(e) For complaint testing, the accuracy shall be determined by taking the average of the percentage registration at light load and at heavy load, giving the heavy load registration a weight of four.

14:5–3.4 Outdoor meters

All new electric meters installed outdoors shall be compensated for temperature variations.

14:5–3.5 Readjustment of electric meters

Each meter after being tested shall be adjusted to record within a tolerance of plus 0.3 percent and minus one percent at both light and heavy loads. These tolerances are specified to allow for necessary variations and meters must be adjusted to within the allowable tolerances as nearly as practicable to zero error. Meters removed from service are to be tested and adjusted in the meter room before being put in service again. Each electric meter shall be tested for accuracy before installation or within 30 days after being set.

SUBCHAPTER 4. REGULATION FOR RESIDENTIAL ELECTRIC UNDERGROUND EXTENSIONS

14:5–4.1 Applicability

(a) Extension of electric distribution lines necessary to furnish an electric system to new residential subdivisions having three or more building lots, or to new multiple-occupancy buildings, shall be made underground.

(b) Such extensions of service shall be made by the utility in accordance with the provisions in this regulation. This Subchapter shall apply to those lines on which actual construction has commenced on or after January 1, 1974.

As amended, R.1973 d.335, effective December 3, 1973.
See: 6 N.J.R. 22(b).
As amended, R.1975 d.243, effective August 14, 1975.
See: 7 N.J.R. 29(a), 7 N.J.R. 437(b).

Case Notes

General powers given to municipalities to regulate and inspect erection, alteration or repair of structures preempted by State with respect to installation and inspection of private home electrical wiring; ordinance mandating copper wiring use invalid as contravening legislative plan for regulation of electrical industry by Public Utilities Commission (citing former N.J.A.C. 14:5–7.5 and 7.9). Warren Park Estates, Inc. v. Twp. Committee, East Windsor Twp., 136 N.J.Super. 180, 345 A.2d 346 (App.Div.1975).

14:5–4.2 Definitions

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

"Applicant" means the subdivider, developer, builder or owner applying for the construction of an electric distribution system in a subdivision.

"Board" means Board of Regulatory Commissioners.

"Building" means a permanent structure enclosed within exterior walls or fire walls, built, erected and framed of component structural parts and designed for single-family or duplex-family occupancy.

1. A duplex family building may consist of either a duplex apartment with rooms on two floors and a private interstairway, or a duplex house with two separate family units side by side.

"Cost" means actual expense incurred for materials and labor employed in the installation of an underground residential distribution system, including overheads directly at-

tributable to the field work, but excluding overrides or loading factors, such as for back-up personnel, mapping, records, clerical, superintendence or general office.

"Existing street" means a public street, road or highway, traversing or abutting the applicant's subdivision, that was in existence and utilized prior to the approval and establishment of the subdivision.

"Extension" means an extension of facilities located on streets, highways, and/or rights of way acquired by the utility for common distribution.

"Mobile home" means a dwelling unit constructed for permanent occupancy which is designed for moving along roads and highways by towing with a truck or tractor and which is installed on a permanent foundation.

"Multiple-occupancy building" means a permanent structure enclosed or with exterior walls or fire walls, built, erected and framed of component structural parts and designed to contain three or more individual dwelling units and consisting of not more than four stories.

"New street" means a public street, road or highway, traversing or abutting the applicant's subdivision, that was or will be constructed subsequent to the approval and establishment of the subdivision.

"Subdivision" means the tract of land which is divided into lots as approved by the appropriate authorities for the construction of new residential buildings or the placement of mobile homes, or the land on which new multiple-occupancy buildings are to be erected.

"Utility" means an "electric company" as defined in N.J.S.A. 48:2–13.

As amended, R.1973 d.335, effective December 3, 1973.
See: 6 N.J.R. 22(b).
As amended, R.1975 d.243, effective August 14, 1975.
See: 7 N.J.R. 29(a), 7 N.J.R. 437(b).
Amended by R.1991 d.583, effective December 2, 1991.
See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).
Board designated as Board of Regulatory Commissioners pursuant to Reorganization Plan No. 002–1991.

14:5–4.3 Rights-of-way and easements

(a) Within the applicant's subdivision the utility shall construct, own, operate and maintain underground distribution lines only along public streets, roads and highways which the utility has the legal right to occupy, and on public lands and private property across which rights-of-way and easements satisfactory to the utility both as to location and legal sufficiency are provided without cost to or condemnation by the utility.

(b) Rights-of-way and easements suitable to the utility must be furnished by the applicant in sufficient time to meet service requirements and at no cost to the utility. The rights-of-way or easements so granted must be cleared of trees, tree stumps and other obstructions above or below grade at no charge to the utility to a width sufficient to permit the use of machinery and equipment, and must be graded to within six inches of final grade by the applicant before the utility will commence construction. Such clearance and grading must be maintained by the applicant during construction by the utility.

14:5–4.4 Installation of underground distribution system within subdivision

(a) Upon receipt of a proper application the utility shall, after conditions in N.J.A.C. 14:5–4.3 have been met and after coordination with other utilities, install along new streets and along existing streets not already served by overhead facilities, using suitable materials, an underground electric distribution system reasonably equivalent to a comparable overhead system which will assure that the applicant will receive safe, adequate and proper electric service.

1. "Suitable materials" shall be construed to mean those components of a direct buried residential-type underground distribution system, including but not limited to transformers, which shall be pad mounted unless otherwise directed by the Board, cables, conduits, street lighting poles and fixtures, switch gear and enclosures, which the industry has adopted as standard consistent with the "state of the art" as it applies to the development of such components and also consistent with the service requirements of this rule. Such standards shall be understood to be reasonable standards designed to implement this rule with a minimum increase in the difference in cost between overhead and underground distribution systems.

2. At the request of the applicant, the utility may provide components which exceed such standards, provided that applicant shall bear the full cost of the excess facilities requested.

3. No utility will be obligated to furnish electric service to any building in a subdivision unless and until an application has been made for the distribution system in the subdivision in accordance with this subsection and a deposit has been made in accordance with N.J.A.C. 14:5–4.6, unless otherwise ordered by the Board.

(b) The applicant shall supply to the utility the preliminary or tentative subdivision map which has been submitted to and approved by the appropriate authorities, showing the subdivision of all of the applicant's property, together with the anticipated electric load requirements for each living unity, to facilitate planning for the ultimate supply in the form of branch circuit, main feeder and/or substation facilities required.