CHAPTER 5

ELECTRIC SERVICE

Authority

N.J.S.A. 48:2–13.

Source and Effective Date

R.2002 d.314, effective August 21, 2002. See: 34 N.J.R. 1390(a), 34 N.J.R. 3234(a).

Chapter Expiration Date

Chapter 5, Electric Service, expires on August 21, 2007.

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 adopted as R.1971 d.183, effective December 31, 1971. See: 1 N.J.R. 9(a), 3 N.J.R. 277(c). Subchapter 7, was adopted as R.1973 d.106, effective April 19, 1973. 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 Subchapter 7 was repealed by R.1977 d.37, effective February 17, 1977. See: 9 N.J.R. 139(a).

Pursuant to Executive Order No. 66(1978), Subchapter 3 expired on April 23, 1984.

A new Subchapter 3, Meters, was adopted as R.1985 d.625 effective December 16, 1985. See: 17 N.J.R. 2237(a), 17 N.J.R. 2998(a).

Pursuant to Executive Order No. 66(1978), Chapter 5, Electric, expired on December 16, 1990.

Chapter 5, Electric Service, was adopted as new rules by R.1991 d.583, effective December 2, 1991. See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).

Pursuant to Executive Order No. 66(1978), Chapter 5, Electric Service, expired on December 2, 1996.

Chapter 5, Electric Service, was adopted as new rules by R.1997 d.99, effective March 3, 1997. See: 28 NJ.R. 4080(a), 29 NJ.R. 786(b).

Subchapter 7, Interim Electric Distribution Service Reliability and Quality Standards, was adopted as R.2001 d.3, effective January 2, 2001. See: 32 N.J.R. 2980(a), 33 N.J.R. 123(a).

Chapter 5, Electric Service, was readopted as R.2002 d.314, effective August 21, 2002. See: Source and Effective Date. See, also, section annotations.

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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

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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. Matter of Appeal of Atlantic City Elec. Co., 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 crossing 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 and 4.

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. Amended by R.1997 d.99, effective March 3, 1997. See: 28 N.J.R. 4080(a), 29 N.J.R. 786(b). Changed N.J.A.C. references.

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.

14:5–1.6 Identification of conductors

Each company using a random burial method of the underground system shall properly identify their cable, and employees of a company shall know the identification of the cable belonging to their company.

14:5–1.7 Ground protection

(a) Where communication and power supply conductors are buried in the same trench without separation, the following ground protection shall be provided:

1. At each transformer and/or pedestal installation all grounds, sheaths and neutrals shall be interconnected. The common neutral conductor shall normally be continuous. Where straight splices are required in the common neutral, only two ends of the conductors shall be joined with one conductor. All interconnections, including equipment neutral connections, to the common neutral required by N.J.A.C. 14:5–1.2 through 1.8 shall be made by taps to the common neutral.

2. Telephone protectors, communication service cable shields and secondary neutrals shall be connected to a common ground at each customer's service entrance when communication circuits are underground without separation from power conductors.

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.

14:5–1.8 Depth of buried cables

Where communication and power supply cables of over 550 volts between conductors are buried without separation in the same trench or without mechanical protection, the power cable shall be buried to a minimum of 30 inches of cover except under railroad tracks where they shall be buried with a minimum cover of 42 inches. In rock, 24 inch minimum cover will be acceptable or a lesser cover will be accepted where an adequate means of mechanical protection is provided.

Amended by R.2002 d.314, effective September 16, 2002. See: 34 N.J.R. 1390(a), 34 N.J.R. 3234(a).

14:5–1.9 Inspection of property

Each electric utility shall inspect lamps and street lighting accessories and maintain such service in accordance with established practice. Whenever any transformers, high tension insulators, and equipment are removed from the system for any reason they shall be inspected as to safety and serviceability before being reinstalled in the same or other location.

SUBCHAPTER 2. SERVICE

14:5–2.1 Service connections; electric

(a) In areas not specifically designated as "underground zones" each electric utility shall supply without cost to the customer at least 150 feet or more if no pole or structure is involved of overhead service connection as measured from the curb line nearest to the customer's facilities. Where the customer desires an underground service connection such facilities shall be provided, installed and maintained at the customer's sole cost and expense.

(b) In areas specifically designed as "underground zones" each electric utility shall supply without cost to the customer not more than 30 feet of underground service connection as measured at right angles to the curb nearest the point of service connection to the customer's facilities provided that an electric utility shall not be required to supply a service connection in whole or in part under or within a building.

(c) If the length of service connection exceeds the amount mentioned in (b) above, the customer may be required to pay for the cost of such excess.

(d) No utility shall be required to install service for a single phase motor having a rating greater than five horse-power.

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.

14:5–2.2 Polyphase service

Where polyphase service is available, or can be made available in accordance with the rules and regulations in the utility's tariff, an applicant for polyphase service for a motor installation shall be supplied polyphase service where any one motor is over ten horsepower, or where any one motor is between five horsepower and ten horsepower and the supply of such motor with single phase service is likely to have an objectionable effect on the service to the applicant or upon other customers.

14:5–2.3 Adequacy of service

(a) Electric utilities supplying electrical energy on a constant potential system shall adopt and maintain a standard average value of voltage as measured at the point of attachment to the customer's wiring; and the normal variations, as measured by a standardized voltmeter, shall not vary for periods exceeding five minutes for service supplied at 150 volts or less to ground more than four percent above, nor more than four percent below said standard average voltage for said location which is in force at the time; provided, however, the variations in voltage caused by the operation of apparatus in the customer's premises in violation of the utility's rules, the action of the elements, or other causes beyond the utility's control shall not be considered a violation of this provision.

(b) Each electric utility supplying alternating current shall adopt a standard frequency, the suitability of which may be determined by the Board, and shall maintain this frequency; provided, however, that changes or variations of frequency which are clearly due to no lack of proper equipment or reasonable care on the part of the utility shall not be considered a violation of this rule.

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. Amended by R.2002 d.314, effective September 16, 2002. See: 34 N.J.R. 1390(a), 34 N.J.R. 3234(a).

14:5-2.4 Sealing of main fuse cabinets or circuit breakers

In the interest of safety to the electric utility customer and as a measure of protection to the utility, main service cabinets or cabinets enclosing main fuses and circuits may be sealed; provided, however, that the main switches or circuit breakers in such cabinets are externally operable; that service entrance wires are installed in accordance with the National Electrical Code; and that fuses or circuit breakers other than above mentioned are made accessible to the customer. The utility's service department should be so organized and directed that its customers may be assured prompt restoration of service when interrupted through failure of main fuses or opening of the circuit breakers which are sealed.

14:5–2.5 Grounding of secondaries

Secondaries shall be grounded by electric utilities in a manner which accords with the applicable provisions of the National Electrical Safety Code.

14:5–2.6 Refusal to connect

An electric utility may refuse to connect with any customer's installation when it is not in accordance with the National Electrical Code and with standard terms and conditions of the utility furnishing the service, and where a certificate approving the customer's electrical installation has not been issued by a county or a municipality or by some person, agency or organization duly appointed by the county or municipality to make such inspections. When a county or municipality has not provided, in accordance with applicable statutes, for the regulation and inspection of wires and appliances for the utilization of electrical energy, or has not appointed any person, agency or organization to make such inspections, then an inspection certificate, issued by an inspection agency designated by the electric utility in its filed tariff, shall be accepted in lieu thereof.

14:5–2.7 Accidents

Each electric utility shall report accidents in conformance with the provisions of N.J.A.C. 14:3–6.4.

New Rule, R.2002 d.314, effective September 16, 2002. See: 34 N.J.R. 1390(a), 34 N.J.R. 3234(a).

SUBCHAPTER 3. METERS

14:5–3.1 Testing of electric meters

(a) Each utility furnishing electric service shall provide and have available a meter testing laboratory, standard meters and instruments, and such other equipment and facilities as may be necessary to make the tests required by these regulations, or by other orders of the Board.

(b) Each utility furnishing electric service shall provide and have available such portable indicating electrical testing instruments and portable watt-hour meters of suitable range and type for testing service watt-hour meters, switchboard instruments, recording voltmeters and other electrical instruments in use as may be deemed necessary by the Board.

(c) For testing the accuracy of the portable watt-hour meters, commonly known as "rotating standards," and the portable instruments used for testing customer's service meters, each utility shall provide and have available suitable indicating electrical instruments, watt-meters, watt-hour meters, or any or all of them hereinafter called "reference standards". Such standards may be of the service type of watt-hour meters, but, if so, such watt-hour meters shall be permanently mounted in the meter laboratory of the utility and shall be used for no other purpose than for checking standards. All reference standards may be tested, adjusted and sealed by the Board at its discretion.