

CHAPTER 20
SERVICE SUPPLIED BY ELECTRIC UTILITIES
[Prior to 10/8/86, Commerce Commission[250]]

199—20.1(476) General information.

20.1(1) *Authorization of rules.* Iowa Code chapter 476 provides that the Iowa utilities board shall establish all needful, just and reasonable rules, not inconsistent with law, to govern the exercise of its powers and duties, the practice and procedure before it, and to govern the form, content and filing of reports, documents and other papers necessary to carry out the provisions of this law.

Iowa Code chapter 478 provides that the Iowa utilities board shall have power to make and enforce rules relating to the location, construction, operation and maintenance of certain electrical transmission lines.

The application of the rules in this chapter to municipally owned utilities furnishing electricity is limited by Iowa Code section 476.1B, and the application of the rules in this chapter to electric utilities with fewer than 10,000 customers and to electric cooperative associations is limited by the provisions of Iowa Code section 476.1A.

20.1(2) *Application of rules.* The rules shall apply to any electric utility operating within the state of Iowa subject to Iowa Code chapter 476, and to the construction, operation and maintenance of electric transmission lines to the extent provided in Iowa Code chapter 478, and shall supersede all tariffs on file with the board which are in conflict with these rules.

These rules are intended to promote safe and adequate service to the public, to provide standards for uniform and reasonable practices by utilities, and to establish a basis for determining the reasonable-ness of such demands as may be made by the public upon the utilities.

A request to waive the application of any rule on a permanent or temporary basis may be made in accordance with 199—1.3(17A,474,476,78GA,HF2206).

The adoption of these rules shall in no way preclude the board from altering or amending them pursuant to statute or from making such modifications with respect to their application as may be found necessary to meet exceptional conditions.

These rules shall in no way relieve any utility from any of its duties under the laws of this state.

20.1(3) *Definitions.* The following words and terms when used in these rules, shall have the meaning indicated below:

“*Acid Rain Program*” means the sulfur dioxide and nitrogen oxides air pollution control program established pursuant to Title IV of the Act under 40 CFR Parts 72-78.

“*Act*” means the Clean Air Act, 42 U.S.C. Section 7401, et seq., as amended by Pub. L. 101-549, November 15, 1990.

“*Affected unit*” means a unit or source that is subject to any emission reduction requirement or limitation under the Acid Rain Program, or a unit or source that opts in under 40 CFR Part 74.

“*Allowance*” means an authorization, allocated by the United States Environmental Protection Agency (EPA) under the Acid Rain Program, to emit up to one ton of sulfur dioxide, during or after a specified calendar year.

“*Allowance futures contract*” is an agreement between a futures exchange clearinghouse and a buyer or seller to buy or sell an allowance on a specified future date at a specified price.

“*Board*” means the utilities board.

“*Complaint*” as used in these rules is a statement or question by anyone, whether a utility customer or not, alleging a wrong, grievance, injury, dissatisfaction, illegal action or procedure, dangerous condition or action, or utility obligation.

“*Compliance plan*” means the document submitted for an affected source to the Environmental Protection Agency which specifies the methods by which each affected unit at the source will meet the applicable emissions limitation and emissions reduction requirements.

“*Customer*” means any person, firm, association, or corporation, any agency of the federal, state or local government, or legal entity responsible by law for payment for the electric service or heat from the electric utility.

“*Delinquent*” or “*delinquency*” means an account for which a service bill or service payment agreement has not been paid in full on or before the last day for timely payment.

“*Distribution line*” means any single or multiphase electric power line operating at nominal voltage in either of the following ranges: 2,000 to 26,000 volts between ungrounded conductors or 1,155 to 15,000 volts between grounded and ungrounded conductors, regardless of the functional service provided by the line.

“*Economy energy*” is energy bought or sold in a transaction wherein the supplier’s incremental cost is less than the buyer’s decremental cost, and the differential in cost is shared in an equitable manner by the supplier and buyer.

“*Electric plant*” includes all real estate, fixtures and property owned, controlled, operated or managed in connection with or to facilitate production, generation, transmission, or distribution, in providing electric service or heat by an electric utility.

“*Electric service*” is furnishing to the public for compensation any electricity, heat, light, power, or energy.

“*Energy*” means electric energy measured in kilowatt hours.

“*Firm power*” is power and associated energy intended to be available at all times during the period covered by the commitment.

“*Gains and losses from allowance sales*” are calculated as the difference between the sale price of allowances sold during the month and the weighted average unit cost of inventoried allowances.

“*Meter*” means, unless otherwise qualified, a device that measures and registers the integral of an electrical quantity with respect to time.

“*Meter shop*” is a shop where meters are inspected, repaired and tested, and may be at a fixed location or may be mobile.

“*Operating reserve*” is a reserve generating capacity required to ensure reliability of generation resources.

“*Operational control energy*” is energy supplied by a selling utility to a buying utility for the improvement of electric system operation.

“*Outage energy*” is energy purchased during emergency or scheduled maintenance outages of generation or transmission facilities, or both.

“*Participation power*” means power and associated energy or energy which is purchased or sold from a specific unit or units on the basis that its availability is subject to prorate or other specified reduction if the units are not operated at full capacity.

“*Peaking power*” is power and associated energy intended to be available at all times during the commitment and which is anticipated to have low load factor use.

“*Power*” means electric power measured in kilowatts.

“*Price hedging*” means using futures contracts or options to guard against unfavorable price changes.

“*Rate-regulated utility*” means any utility, as defined in 20.1(3), which is subject to board rate regulation under Iowa Code chapter 476.

“*Secondary line*” means any single or multiphase electric power line operating at nominal voltage less than either 2,000 volts between ungrounded conductors or 1,155 volts between grounded and ungrounded conductors, regardless of the functional service provided by the line.

“*Service limitation*” means the establishment of a limit on the amount of power that may be consumed by a residential customer through the installation of a service limiter on the customer’s meter.

“*Service limiter*” means a circuit breaker device that limits a residential customer’s power consumption to 15 amps at 120 volts (or some higher level of usage approved by the board) and that either resets itself automatically or can be reset by the customer.

“*Speculation*” means using futures contracts or options to profit from expectations of future price changes.

“*Tariff*” means the entire body of rates, tolls, rentals, charges, classifications, rules, procedures, policies, etc., adopted and filed with the board by an electric utility in fulfilling its role of furnishing service.

“*Timely payment*” is a payment on a customer’s account made on or before the date shown on a current bill for service, or on a form which records an agreement between the customer and a utility for a series of partial payments to settle a delinquent account, as the date which determines application of a late payment charge to the current bill or future collection efforts.

“*Transmission line*” means any single or multiphase electric power line operating at nominal voltages at or in excess of either 69,000 volts between ungrounded conductors or 40,000 volts between grounded and ungrounded conductors, regardless of the functional service provided by the line.

“*Utility*” means any person, partnership, business association or corporation, domestic or foreign, owning or operating any facilities for providing electric service or heat to the public for compensation.

“*Weighted average unit cost of inventoried allowances*” equals the dollars in inventory at the end of the month divided by the total allowances available for use at the end of the month.

“*Wheeling service*” is the service provided by a utility in consenting to the use of its transmission facilities by another party for the purpose of scheduling delivery of power or energy, or both.

20.1(4) Abbreviations. The following abbreviations may be used where appropriate:

ANSI—American National Standards Institute, 1430 Broadway, New York, New York 10018.

DOE—Department of Energy, Washington, D.C. 20426.

EPA—United States Environmental Protection Agency.

FCC—Federal Communications Commission, 1919 M Street, Washington, D.C. 20554.

FERC—Federal Energy Regulatory Commission, Washington, D.C. 20426.

NARUC—National Association of Regulatory Utility Commissioners, P.O. Box 684, Washington, D.C. 20044.

NBS—National Bureau of Standards, Washington, D.C. 20234.

NFPA—National Fire Protection Association, 470 Atlantic Ave., Boston, Massachusetts 02210.

199—20.2(476) Records, reports, and tariffs.

20.2(1) Location and retention of records. Unless otherwise specified by this chapter, all records required by these rules shall be kept and preserved in accordance with the applicable provisions of 199—Chapter 18.

20.2(2) Tariffs to be filed with the board. The schedules of rates and rules of rate-regulated electric utilities shall be filed with the board and shall be classified, designated, arranged and submitted so as to conform to the requirements of this chapter. Provisions of the schedules shall be definite and so stated as to minimize ambiguity or the possibility of misinterpretation. The form, identification and content of tariffs shall be in accordance with these rules.

Utilities which are not subject to the rate regulation provided for by Iowa Code chapter 476 shall not be required to file schedules of rates, rules, or contracts primarily concerned with a rate schedule with the board and shall not be subject to the provisions related to rate regulations, but nothing contained in these rules shall be deemed to relieve any utility of the requirement of furnishing any of these same schedules or contracts which are needed by the board in the performance of the board's duties upon request to do so by the board.

20.2(3) Form and identification. All tariffs shall conform to the following rules:

a. The tariff shall be printed, typewritten or otherwise reproduced on 8½- × 11- inch sheets of durable white paper so as to result in a clear and permanent record. The sheets of the tariff should be ruled or spaced to set off a border on the left side suitable for binding. In the case of utilities subject to regulation by any federal agency the format of sheets of tariff as filed with the board may be the same format as is required by the federal agency provided that the rules of the board as to title page; identity of superseding, replacing or revision sheets; identity of amending sheets; identity of the filing utility, issuing official, date of issue, effective date; and the words "Tariff with board" shall apply in the modification of the federal agency format for the purposes of filing with this board.

b. The title page of every tariff and supplement shall show:

(1) The first page shall be the title page which shall show:

(Name of Public Utility)
Electric Tariff
Filed with
Iowa Utilities Board
(Date)

(This requirement does not apply to tariffs or amendments filed with the board prior to July 1, 1981.)

(2) When a tariff is to be superseded or replaced in its entirety, the replacing tariff shall show on the upper right corner of its title page that it supersedes a tariff on file and the number being superseded or replaced, for example:

TARIFF NO. _____
SUPERSEDES TARIFF NO. _____

(This requirement does not apply to tariffs or amendments filed with the board prior to July 1, 1981.)

(3) When a new part of a tariff eliminates an existing part of a tariff it shall so state and clearly indicate the part eliminated.

(4) Any tariff modifications as defined above shall be marked in the right-hand margin of the replacing tariff sheet with symbols as here described to indicate the place, nature and extent of the change in text.

—Symbols—

(C)—Changed regulation

(D)—Discontinued rate or regulation

(I)—Increase in rate or new treatment resulting in increased rate

(N)—New rate, treatment or regulation

(R)—Reduction in rate or new treatment resulting in reduced rate

(T)—Change in text only

c. All sheets except the title page shall have, in addition to the above-stated requirements, the following information:

(1) Name of utility under which shall be set forth the words "Filed with board." If the utility is not a corporation, and a trade name is used, the name of the individual or partners must precede the trade name.

(2) Issuing official and issue date.

(3) Effective date (to be left blank by rate-regulated utilities).

d. All sheets except the title page shall have the following form:

(Company Name)	(Part identification)
Electric Tariff	(This sheet identification)
Filed with board	(Canceled sheet identification, if any)
	(Content or tariff)
Issued: (Date)	Effective:
Issued by: (Name, title)	(Proposed Effective Date:)

The issued date is the date the tariff or the amended sheet content was adopted by the utility.

The effective date will be left blank by rate-regulated utilities and shall be determined by the board. The utility may propose an effective date.

20.2(4) Content of tariffs.

a. A table of contents containing a list of rate schedules and other sections in the order in which they appear showing the sheet numbers of the first page of each rate schedule or other section. In the event the utility filing the tariff elects to segregate a section such as general rules from the section containing the rate schedules or other sections, it may at its option prepare a separate table of contents for each such segregated section.

b. A preliminary statement containing a brief general explanation of the utility's operations.

c. All rates for service with indication for each rate of the type and voltage of service and the class of customers to which each rate applies. There shall also be shown any limitations on loads and type of equipment which may be connected, the net prices per unit of service and the number of units per billing period to which the net prices apply, the period of billing, the minimum bill, any effect of transformer capacity upon minimum bill or upon the number of kWh in any step of the rate, method of measuring demands, method of calculating or estimating loads in cases where transformer capacity has a bearing upon minimum bill or size of rate steps, level payment plan, and any special terms or conditions applicable. The period during which the net amount may be paid before the account becomes delinquent shall be specified. In any case where net and gross amounts are billed, the difference between net and gross is a late payment charge and shall be so specified.

d. The voltage and type of service, (direct current or single or polyphase alternating current) supplied in each municipality, but without reference required to any particular part thereof.

e. Forms of standard contracts required of customers for the various types of service available.

f. If service to other utilities or municipalities is furnished at a standard filed rate, either a copy of each signed contract or a copy of the standard uniform contract form together with a summary of the provisions of each signed contract. The summary shall show the principal provisions of the contract and shall include the name and address of the customer, the points where energy is delivered, rate, term, minimum, load conditions, voltage of delivery and any special provisions such as rentals. Standard contracts for such sales as that of energy for resale, street lighting, municipal athletic field lighting, and for water utilities may be filed in summary form as above outlined.

g. Copies of special contracts for the purchase, sale, or interchange of electrical energy. All tariffs must provide that, notwithstanding any other provision of this tariff or contract with reference thereto, all rates and charges contained in this tariff or contract with reference thereto may be modified at any time by a subsequent filing made pursuant to the provisions of Iowa Code chapter 476.

h. A list of all communities in which service is furnished.

i. The list of service areas and the rates shall be filed in a form to facilitate ready determination of the rates available in each municipality and in unincorporated communities that have service. If the utility has various rural rates, the areas where the same are available shall be indicated.

- j.* Definitions of classes of customers.
- k.* Extension rules for extending service to new customers indicating what portion of the extension or cost thereof will be furnished by the utility; and if the rule is based on cost, the items of cost included.
- l.* Type of construction which the utility requires the customer to provide if in excess of the Iowa electric safety code or the requirements of the municipality having jurisdiction, whichever may be the most stringent in any particular.
- m.* Specification of such portion of service as the utility furnishes, owns, and maintains, such as service drop, service entrance cable or conductors, conduits, service entrance equipment, meter and socket. Indication of the portions of interior wiring such as range or water heater connection, furnished in whole or in part by the utility, and statement indicating final ownership and responsibility for maintaining equipment furnished by utility.
- n.* Statement of the type of special construction commonly requested by customers which the utility allows to be connected, and terms upon which such construction will be permitted, with due provision for the avoidance of unjust discrimination as between customers who request special construction and those who do not. This applies, for example, to a case where a customer desires underground service in overhead territory.
- o.* Rules with which prospective customers must comply as a condition of receiving service, and the terms of contracts required.
- p.* Rules governing the establishment and maintenance of credit by customers for payment of service bills.
- q.* Rules governing the procedure followed in disconnecting and reconnecting service.
- r.* Notice required from a customer for having service discontinued.
- s.* Rules covering temporary, emergency, auxiliary and stand-by service.
- t.* Rules covering the type of equipment which may or may not be connected, including rules such as those requiring demand-limiting devices or power-factor corrective equipment.
- u.* General statement of the method used in making adjustments for wastage of electricity when accidental grounds exist without the knowledge of the customer.
- v.* Statements of utility rules on meter reading, bill issuance, customer payment, notice of delinquency, and service discontinuance for nonpayment of bill.
- w.* Rules for extending service in accordance with 20.3(13).
- x.* If a sliding scale or automatic adjustment is applicable to regulated rates and charges of billed customers, the manner and method of such adjustment calculation shall be covered through a detailed explanation.
- y.* Rules on how a customer or prospective customer should file a complaint with the utility, and how the complaint will be processed.
- z.* Rules on how a customer, disconnected customer or potential customer for residential service may negotiate for a payment agreement on amount due, determination of even payment amounts, and time allowed for payments.

20.2(5) *Annual, periodic and other reports to be filed with the board.*

- a.* System map verification. The utility shall file annually a verification that it has a currently correct set of utility system maps in accordance with general requirement 20.3(11) and a statement as to the location of the utility's offices where such maps are accessible and available for examination by the board or its agents. The verification and map location information shall also be reported to the board upon other occasions when significant changes occur in either the maps or location of the maps.
- b.* Accident reports. Rescinded IAB 12/11/91, effective 1/15/92. See 199—25.5(476,478).

- c. Rescinded IAB 11/13/02, effective 12/18/02.
- d. Electric service record. Each utility shall compile a monthly record of electric service showing the production, acquisition and disposition of electric energy, the number of customer terminal voltage investigations made, the number of customer meters tested and such other information as may be required by the board. The monthly "Electric Service" record shall be compiled not later than 30 days after the end of the month covered and such record shall, upon and after compilation, be kept available for inspection by the board or its staff at the utility's principal office within the state of Iowa. A summary of the 12 monthly "Electric Service" records for each calendar year shall be attached to and submitted with the utility's annual report to the board.
- e. The utility shall keep the board informed currently by written notice as to the location at which the utility keeps the various classes of records required by these rules.
- f. A copy of the utility's current rules, if any, published or furnished by the utility for the use of engineers, architects, electrical contractors, etc., covering meter and service installations shall be filed with the board.
- g. A copy of each type of customer bill form in current use shall be filed with the board.
- h. A copy of the adjustment calculation shall be provided the board prior to each billing cycle on the forms adopted by the board.
- i. Rescinded IAB 1/9/91, effective 2/13/91.
- j. Residential customer statistics. Each rate-regulated electric utility shall file with the board on or before the fifteenth day of each month one copy of the following residential customer statistics for the preceding month:
- (1) Number of accounts;
 - (2) Number of accounts certified as eligible for energy assistance since the preceding October 1;
 - (3) Number of accounts past due;
 - (4) Number of accounts eligible for energy assistance and past due;
 - (5) Total revenue owed on accounts past due;
 - (6) Total revenue owed on accounts eligible for energy assistance and past due;
 - (7) Number of disconnection notices issued;
 - (8) Number of disconnection notices issued on accounts eligible for energy assistance;
 - (9) Number of disconnections for nonpayment;
 - (10) Number of reconnections;
 - (11) Number of accounts determined uncollectible; and
 - (12) Number of accounts eligible for energy assistance and determined uncollectible.
- k. List of persons authorized to receive board inquiries. Each utility shall file with the board a list of names, titles, addresses, and telephone numbers of persons authorized to receive, act upon, and respond to communications from the board in connection with: (1) general management duties; (2) customer relations (complaints); (3) engineering operations; (4) meter tests and repairs; (5) emergencies during nonoffice hours; (6) franchises for electric lines; (7) certificates for electric generating plants. Such information shall be kept current as changes or corrections are made.

This rule is intended to implement Iowa Code section 476.2.

199—20.3(476) General service requirements.

20.3(1) Disposition of electricity. The meter and associated instrument transformers shall be owned by the utility. The wiring between the instrument transformers and the meter shall be owned or controlled by the utility. The utility shall place a visible seal on all meters in customer use, such that the seal must be broken to gain entry.

- a. All electricity sold by a utility shall be on the basis of meter measurement except:
- (1) Where the consumption of electricity may be readily computed without metering; or
 - (2) For temporary service installations.

b. The amount of all electricity delivered to multioccupancy premises within a single building, where units are separately rented or owned, shall be measured on the basis of individual meter measurement for each unit, except in the following instances:

- (1) Where electricity is used in centralized heating, cooling, water-heating, or ventilation systems;
- (2) Where a facility is designated for elderly or handicapped persons;
- (3) Where submetering or resale of service was permitted prior to 1966; or
- (4) Where individual metering is impractical. "Impractical" means: (1) where conditions or structural barriers exist in the multioccupancy building that would make individual meters unsafe or physically impossible to install; (2) where the cost of providing individual metering exceeds the long-term benefits of individual metering; or (3) where the benefits of individual metering (reduced and controlled energy consumption) are more effectively accomplished through a master meter arrangement.

If a multioccupancy building is master-metered, the end-user occupants may be charged for electricity as an unidentified portion of the rent, condominium fee, or similar payment, or, if some other method of allocating the cost of the electric service is used, the total charge for electric service shall not exceed the total electric bill charged by the utility for the same period.

c. Master metering to multiple buildings is prohibited, except for multiple buildings owned by the same person or entity. Multioccupancy premises within a multiple building complex may be master-metered pursuant to this paragraph only if the requirements of paragraph 20.3(1) "*b*" have been met.

d. For purposes of this subrule, a "master meter" means a single meter used in determining the amount of electricity provided to a multioccupancy building or multiple buildings.

e. This rule shall not be construed to prohibit any utility from requiring more extensive individual metering than otherwise required by this rule if pursuant to tariffs filed with and approved by the board.

f. All electricity consumed by the utility shall be on the basis of meter measurement except where consumption may be readily computed without metering, or where metering is impractical.

20.3(2) Condition of meter. Rescinded IAB 11/12/03, effective 12/17/03.

20.3(3) Meter reading records. The meter reading records shall show:

- a.* Customer's name, address, and rate schedule or identification of rate schedule.
- b.* Identification of the meter or meters either by permanently marked utility number or by manufacturer's name, type number and serial number.
- c.* Meter readings.
- d.* If the reading has been estimated.
- e.* Any applicable multiplier or constant.

20.3(4) Meter charts. All charts taken from recording meters shall be marked with the initial and final date and hour of the record, the meter identification, customer's name and location and the chart multiplier.

20.3(5) Meter register. If it is necessary to apply a multiplier to the meter readings, the multiplier must be marked on the face of the meter register or stenciled in weather resistant paint upon the front cover of the meter. Customers shall have continuous visual access to meter registers as a means of verifying the accuracy of bills presented to them and for implementing such energy conservation initiatives as they desire, except in the individual locations where the utility has experienced vandalism to windows in the protective enclosures. Where remote meter reading is used, whether outdoor on premises or off premises automated, the customer shall also have readable meter registers at the meter.

Where magnetic tape or other delayed processing means is used the utility may comply by having readable kWh registers only, visually accessible.

In instances in which the utility has determined that readable access, to locations existing July 1, 1981, will create a safety hazard, the utility is exempted from the access provisions above.

In instances when a building owner has determined that unrestricted access to tenant metering installation would create a vandalism or safety hazard the utility is exempted from the access provision above.

Continuing efforts should be made to eliminate or minimize the number of restricted locations. The utility should assist affected customers in obtaining meter register information.

20.3(6) *Meter reading and billing interval.* Readings of all meters used for determining charges and billings to customers shall be scheduled at least monthly and for the beginning and termination of service. Bills to larger customers may, for good cause, be rendered weekly or daily for a period not to exceed one month. Intervals other than monthly shall not be applied to smaller customers, or to larger customers after the initial month provided above, without a waiver from the board. A waiver request must include sufficient information to comply with 199—1.3(17A,474,476,78GA,HF2206). If the board denies a waiver, or if a waiver is not sought with respect to a high demand customer after the initial month, that customer's meter shall be read monthly for the next 12 months. The group of larger customers to which shorter billing intervals may be applied shall be specified in the utility's tariff sheets, but shall not include residential customers.

An effort shall be made to obtain readings of the meters on corresponding days of each meter-reading period. When the meter reading date causes a given billing period to deviate by more than 10 percent (counting only business days) from the normal meter reading period, such bills shall be prorated on a daily basis.

The utility may permit the customer to supply the meter readings by telephone or on a form supplied by the utility. The utility may arrange for customer meter reading forms to be delivered to the utility by United States mail, electronically, or by hand delivery. The utility may arrange for the meter to be read by electronic means. Unless the utility has a plan to test check meter readings, a utility representative shall physically read the meter at least once each 12 months.

In the event that the utility leaves a meter reading form with the customer when access to meters cannot be gained and the form is not returned in time for the billing operation, an estimated bill may be rendered.

If an actual meter reading cannot be obtained, the utility may render an estimated bill without reading the meter or supplying a meter reading form to the customer. Only in unusual cases or when approval is obtained from the customer shall more than three consecutive estimated bills be rendered.

20.3(7) *Demand meter registration.* When a demand meter is used for billing, the meter installation should be designed so that the highest expected annual demand reading to be used for billing will appear in the upper half of the meter's range.

20.3(8) *Service areas.* Service areas are defined by the boundaries on service area maps, available for viewing during regular business hours at the board's offices, and available for purchase at the cost of reproduction. These service area maps are adopted as part of this rule and are incorporated in this rule by this reference.

20.3(9) *Petition for modification of service area and answers.* An exclusive service area is subject to modification through a contested case proceeding which may be commenced by filing a petition for modification of service area with the board. The board may commence a service area modification proceeding on its own motion.

Any electric utility or municipal corporation may file a petition for modification of service area which shall contain a legal description of the service area desired, a designation of the utilities involved in each boundary section, and a justification for the proposed service area modification. The justification shall include a detailed statement of why the proposed modification is in the public interest. A map showing the affected areas which complies with subrule 20.3(11) "a" shall be attached to the petition as an exhibit. The petition shall be delivered by the United States Postal Service or personal service and shall be considered as filed with the agency on the date of the postmark or the date of personal service.

Copies of the petition shall be served on all utilities involved and the consumer advocate. Those utilities and the consumer advocate shall be parties of record to the proceeding.

All parties shall file an answer which complies with 199—subrule 7.5(1).

20.3(10) Certificate of authority. Any electric utility or municipal corporation requesting a service territory modification pursuant to subrule 20.3(9) which would result in service to a customer by a utility other than the utility currently serving the customer must also petition the board for a certificate of authority under Iowa Code section 476.23. The electric utility or municipal corporation shall pay the party currently serving the customer a reasonable price for the facilities serving the customer.

20.3(11) Maps.

a. Each utility shall maintain a current map or set of maps showing the physical location of electric lines, stations, and electric transmission facilities for its service areas. The maps shall include the exact location of the following:

- (1) Generating stations with capacity designation.
- (2) Purchased power supply points with maximum contracted capacity designation.
- (3) Purchased power metering points if located at other than power delivery points.
- (4) Transmission lines with size and type of conductor designation and operating voltage designation.
- (5) Transmission-to-transmission voltage transformation substations with transformer voltage and capacity designation.
- (6) Transmission-to-distribution voltage transformation substations with transformer voltage and capacity designation.
- (7) Distribution lines with size and type of conductor designation, phase designation and voltage designation.
- (8) All points at which transmission, distribution or secondary lines of the utility cross Iowa state boundaries.
- (9) All current information required in Iowa Code section 476.24(1).
- (10) All county boundaries and county names.
- (11) Natural and artificial lakes which cover more than 50 acres and all rivers.
- (12) Any additional information required by the board.

b. All maps shall be available for examination at the utility's designated offices during the utility's regular office hours. The maps shall be drawn with clean, uniform lines to a scale of one inch per mile. A large scale shall be used where it is necessary to clarify areas where there is a heavy concentration of facilities. All cartographic details shall be clean cut, and the background shall contain little or no coloration or shading.

20.3(12) Rescinded, IAB 6/29/88, effective 8/3/88.

20.3(13) Extensions and service line extensions to customers.

a. Definitions. The following definitions shall apply to the terms used in this rule:

"Advances for construction costs," as used in these subrules, are cash payments, or surety bonds, or an equivalent surety made to the utility by an applicant for an extension, portions of which may be refunded depending on any subsequent connections made to the extension. Cash payments, surety bonds, or equivalent sureties shall include a grossed-up amount for the income tax effect of such revenue.

"Agreed-upon attachment period," as used in this subrule, means a period of not less than 30 days nor more than one year mutually agreed upon by the utility and the applicant within which the customer will attach. If no time period is mutually agreed upon, the agreed-upon attachment period shall be deemed to be 30 days.

"Contribution in aid of construction," as used in this subrule, means a nonrefundable cash payment grossed-up for the income tax effect of such revenue covering the costs of an extension that are in excess of utility-funded allowances. The amount of tax shall be reduced by the present value of the tax benefits to be obtained by depreciating the property in determining the tax liability.

“Customer advances for construction records,” as used in this subrule, means a separate record established and maintained by the utility, which includes, by depositor, the amount of advance for construction provided by the customer, whether the advance is by cash, surety bond, or equivalent surety, and if by surety bond or equivalent surety, all relevant information concerning the bond, the amount of the refund, if any, to which the depositor is entitled, the amount of refund, if any, which has been made to the customer, the amount unrefunded, and the construction project or work order the extension was installed on.

“Equivalent overhead transformer cost,” as used in this subrule, is that transformer capitalized cost, or fraction thereof, that would be required for similarly situated customers served by a pole-mounted or platform-mounted transformer(s). For each overhead service, it shall be the capitalized cost of the transformer(s) divided by the number of customers served by that transformer(s). For each underground service, it shall be the capitalized cost of an overhead transformer(s) with the same voltage and volt-ampere rating divided by the number of customers served by that transformer(s).

“Estimated annual revenues,” as used in this subrule, shall be calculated based upon the following factors, including, but not limited to: The size of the facility to be used by the customer, the size and type of equipment to be used by the customer, the average annual amount of service required by the equipment, and the average number of hours per day and days per year the equipment will be in use.

“Estimated base revenues,” as used in this subrule, shall be calculated by subtracting the fuel expense costs as described in the uniform system of accounts as adopted by the board from the estimated annual revenues.

“Estimated construction costs,” as used in the subrule, shall be calculated using average costs in accordance with good engineering practices and upon the following factors: amount of service required or desired by the customer requesting the extension; size, location, and characteristics of the extension, including appurtenances, except equivalent overhead transformer cost; and whether the ground is frozen or whether other adverse conditions exist. The average cost per foot shall be computed utilizing the prior calendar year costs, to the extent such cost basis does not exceed the current costs using current construction cost methodologies, resources and material, and working conditions, divided by the total feet of extensions by type of service for the prior calendar year. In no event shall estimated construction costs include costs associated with facilities built for the convenience of the utility.

“Extension” means a distribution or secondary line extension other than a service line extension.

“Point of attachment” is that point of first physical attachment of the utilities’ service drop (overhead) or service lateral (underground) conductors to the customer’s service entrance conductors. For overhead services it shall be the point of tap or splice to the service entrance conductors. For underground services it shall be the point of tap or splice to the service entrance conductors in a terminal box or meter or other enclosure with adequate space inside or outside the building wall. If there is no terminal box, meter, or other enclosure with adequate space, it shall be the point of entrance into the building.

“Service line extension” shall mean any secondary line extension on private property serving a single customer or point of attachment of electric service.

“Similarly situated customer” is a customer whose annual consumption or service requirements, as defined by estimated annual revenue, are similar to other customers with approximately the same annual consumption or service requirements.

“Utility” as used in the subrules, means a rate-regulated utility.

b. Distribution or secondary lines other than service lines.

(1) Plant additions. The utility will provide all electric plant at its cost and expense without requiring an advance for construction from customers or developers except in those unusual circumstances where extensive plant additions are required before the customer can be served, or where the customer will not attach within the agreed-upon attachment period after completion of construction. In such instances, the utility shall require, no more than 30 days prior to commencement of construction, the customer or developer to advance funds which are subject to refund as additional customers are attached. A contract between the utility and the customer which requires an advance by the customer to make plant additions shall be available for board inspection. The utility shall allow the customer or developer, at the customer’s or developer’s option, to provide a nonrefundable contribution in aid of construction instead of a refundable advance for construction, under subparagraphs 20.3(13)“b”(2) and (3).

(2) Advances for construction costs for extensions for customers who will attach within the agreed-upon attachment period. Where the customer will attach within the agreed-upon attachment period after completion of the extension, the following shall apply:

1. If the estimated construction cost to provide an extension is less than or equal to three times the estimated base revenue calculated on the basis of similarly situated customers, the utility shall finance and make the extension without requiring an advance for construction.

2. If the estimated construction cost to provide an extension is greater than three times the estimated base revenue calculated on the basis of similarly situated customers, the applicant for the extension shall contract with the utility and deposit an advance for construction equal to the estimated construction cost less three times the estimated base revenue to be produced by the customer no more than 30 days prior to commencement of construction.

(3) Advances for construction costs for extensions for customers who will not attach within the agreed-upon attachment period. Where the customer will not attach within the agreed-upon attachment period after completion of the extension, the applicant for the extension shall contract with the utility and deposit no more than 30 days prior to the commencement of construction an advance for construction equal to the estimated construction cost.

Advance payments for plant additions or extensions which are subject to refund for a ten-year period may be made by cash, surety bond, or equivalent surety. In the event a surety bond or an equivalent surety is used, the bonded amount shall have added to it a surcharge equal to the annual interest rate paid by the utility on customer bill deposits times the bonded amount. The bond shall be called by the utility at the end of one year or when the earned refunds are equal to the bonded amount, less the surcharge, whichever occurs first. If, upon termination of the surety bond, there are sufficient earned refunds to offset the amount of the surety bond, less the surcharge, the depositors shall provide the utility the amount of the surcharge. If, upon termination of the surety bond, there are not sufficient earned refunds to offset the full amount of the surety bond, less the surcharge, the depositors shall provide the utility a cash deposit equal to the amount of the surety bond, less refunds accumulated during the bonded period, plus the surcharge, or the depositor may pay the interest on the previous year’s bond and rebond the balance due to the utility for a second or third one-year period. Upon receipt of such cash deposit, the utility shall release the surety bond. The cash deposit, less the surcharge, shall be subject to refund by the utility for the remainder of the ten-year period.

(4) Refunds. When the customer has chosen to make an advance for construction rather than a contribution in aid of construction, the utility shall refund to the depositor for a period of ten years from the date of the original advance a pro-rata share for each service attachment to the extension. The pro-rata refund shall be computed in the following manner:

1. If the combined total of three times estimated base revenue for the depositor and each customer who has attached to the extension exceeds the total estimated construction cost to provide the extension, the entire amount of the advance provided by the depositor shall be refunded to the depositor.

2. If the combined total of three times estimated base revenue for the depositor and each customer who has attached to the extension is less than the total estimated construction cost to provide the extension, the amount to be refunded to the depositor shall equal three times estimated base revenue of the customer attaching to the extension.

3. In no event shall the total amount to be refunded to a depositor exceed the amount of the advance for construction made by the depositor. Any amounts subject to refund shall be paid by the utility without interest. At the expiration of the above-described ten-year period, the customer advance for construction record shall be closed and the remaining balance shall be credited to the respective plant account.

c. Service line extensions. The utility shall finance and construct either an overhead or underground service line extension without requiring a contribution in aid of construction or any payment by the applicant where the length of the overhead extension to the first point of attachment is up to 50 feet on private property or where the cost of the underground extension to the meter or service disconnect is less than or equal to the estimated cost of constructing an equivalent overhead service extension of up to 50 feet.

Where the length of the overhead service extension exceeds 50 feet on private property, the applicant shall be required to provide a contribution in aid of construction for that portion of the service extension on the private property, exclusive of the point of attachment, within 30 days after completion. The contribution in aid of construction for that portion of the service extension shall be computed as follows:

$$\begin{aligned} & (\text{Estimated Construction Costs}) \times \\ & \frac{(\text{Total Length in Excess of 50 Feet})}{(\text{Total Length of Service Extension})} \end{aligned}$$

Where the cost of the underground service extension exceeds the estimated cost of constructing an equivalent overhead service extension of up to 50 feet, the applicant shall be required to provide a contribution in aid of construction within 30 days after completion equal to the difference between the estimated cost of constructing the underground service extension and the estimated cost of constructing an equivalent overhead service extension of up to 50 feet.

A utility may adopt a tariff or rule that allows the utility to finance and construct a service line extension of more than 50 feet if the tariff or rule applies equally to all customers or members.

d. Extensions not required. Utilities shall not be required to make extensions as described in this rule, unless the extension shall be of a permanent nature.

e. Extensions permitted. This rule shall not be construed as prohibiting any utility from making a contract with a customer in a different manner, if the contract provides a more favorable method of extension to the customer, so long as no discrimination is practiced among customers or depositors.

This rule is intended to implement Iowa Code section 476.8.

199—20.4(476) Customer relations.**20.4(1) Customer information.** Each utility shall:

a. Maintain up-to-date maps, plans, or records of its entire transmission and distribution systems, together with such other information as may be necessary to enable the utility to advise prospective customers, and others entitled to the information, as to the facilities available for serving prospective customers in its service area.

b. Assist the customer or prospective customer in selecting the most economical rate schedule available for the customer's proposed type of service.

c. Notify customers affected by a change in rates or schedule classification in the manner provided in the rules of practice and procedure before the board. [199—7.4(476)IAC]

d. Post a notice in a conspicuous place in each office of the utility where applications for service are received, informing the public that copies of the rate schedules and rules relating to the service of the utility, as filed with the board, are available for public inspection. If the utility has provided access to its rate schedules and rules for service on its Web site, the notice should include the Web site address.

e. Upon request, inform its customers as to the method of reading meters.

f. State, on the bill form, that tariff and rate schedule information is available upon request at the utility's local business office.

g. Upon request, transmit a statement of either the customer's actual consumption, or degree day adjusted consumption, at the company's option, of electricity for each billing during the prior 12 months.

h. Furnish such additional information as the customer may reasonably request.

20.4(2) Customer contact employee qualifications. Inquiries for information or complaints to a utility shall be resolved promptly and courteously. Employees who receive customer telephone calls and office visits shall be qualified and trained in screening and resolving complaints, to avoid a preliminary recitation of the entire complaint to employees without ability and authority to act. The employee shall provide identification to the customer which will enable the customer to reach that employee again if needed.

Each utility shall notify its customers, by bill insert or notice on the bill form, of the address and telephone number where a utility representative qualified to assist in resolving the complaint can be reached. The bill insert or notice shall also include the following statement: "If (utility name) does not resolve your complaint, you may request assistance from the Utilities Division, Department of Commerce, 350 Maple Street, Des Moines, Iowa 50319, (515)281-3839 or toll-free (877)565-4450."

The bill insert or notice for municipal utilities shall include the following statement: "If your complaint is related to service disconnection, safety, or renewable energy, and (utility name) does not resolve your complaint, you may request assistance from the Utilities Division, Department of Commerce, 350 Maple Street, Des Moines, Iowa 50319, (515)281-3839 or toll-free (877)565-4450."

The bill insert or notice for non-rate-regulated rural electric cooperatives shall include the following statement: "If your complaint is related to the (utility name) service rather than its rates, and (utility name) does not resolve your complaint, you may request assistance from the Utilities Division, Department of Commerce, 350 Maple Street, Des Moines, Iowa 50319, (515)281-3839 or toll-free (877)565-4450."

The bill insert or notice on the bill will be provided no less than annually. Any utility which does not use the standard form contained herein shall file its proposed form in its tariff for approval. A utility which bills by postcard may place an advertisement in a local newspaper of general circulation or a customer newsletter instead of a mailing. The advertisement must be of a type size that is easily legible and conspicuous and must contain the information set forth above.

20.4(3) Customer deposits.

a. Each utility may require from any customer or prospective customer a deposit intended to guarantee partial payment of bills for service. Each utility shall allow a person other than the customer to pay the customer's deposit. In lieu of a cash deposit, the utility may accept the written guarantee of a surety or other responsible party as surety for an account. Upon termination of a guarantee contract, or whenever the utility deems the contract insufficient as to amount or surety, a cash deposit or a new or additional guarantee may be required for good cause upon reasonable written notice.

b. A new or additional deposit may be required from a customer when a deposit has been refunded or is found to be inadequate. Written notice shall be mailed advising the customer of any new or additional deposit requirement. The customer shall have no less than 12 days from the date of mailing to comply. The new or additional deposit shall be payable at any of the utility's business offices or local authorized agents. An appropriate receipt shall be provided. No written notice is required to be given of a deposit required as a prerequisite for commencing initial service.

c. No deposit shall be required as a condition for service other than determined by application of either credit rating or deposit calculation criteria, or both, of the filed tariff.

d. The total deposit for any residential or commercial customer for a place which has previously received service shall not be greater than the highest billing of service for one month for the place in the previous 12-month period. The deposit for any residential or commercial customer for a place which has not previously received service, or for an industrial customer, shall be the customer's projected one-month usage for the place to be served as determined by the utility, or as may be reasonably required by the utility in cases involving service for short periods or special occasions.

20.4(4) Interest on customer deposits. Interest shall be paid by the rate-regulated utility to each customer required to make a deposit. On or after April 21, 1994, rate-regulated utilities shall compute interest on customer deposits at 7.5 percent per annum, compounded annually. Interest for prior periods shall be computed at the rate specified by the rule in effect for the period in question. Interest shall be paid for the period beginning with the date of deposit to the date of refund or to the date that the deposit is applied to the customer's account, or to the date the customer's bill becomes permanently delinquent. The date of refund is that date on which the refund or the notice of deposit refund is forwarded to the customer's last-known address. The date a customer's bill becomes permanently delinquent, relative to an account treated as an uncollectible account, is the most recent date the account became delinquent.

20.4(5) Customer deposit records. Each utility shall keep records to show:

- a. The name and address of each depositor.
- b. The amount and date of the deposit.
- c. Each transaction concerning the deposit.

20.4(6) Customer's receipt for a deposit. Each utility shall issue a receipt of deposit to each customer from whom a deposit is received, and shall provide means whereby a depositor may establish claim if the receipt is lost.

20.4(7) Deposit refund. A deposit shall be refunded after 12 consecutive months of prompt payment (which may be 11 timely payments and 1 automatic forgiveness of late payment). For refund purposes the account shall be reviewed for prompt payment after 12 months of service following the making of the deposit and for each 12-month interval terminating on the anniversary of the deposit. However, deposits received from customers subject to the exemption provided by 20.4(3)"b," including surety deposits, may be retained by the utility until final billing. Upon termination of service, the deposit plus accumulated interest, less any unpaid utility bill of the customer, shall be reimbursed to the person who made the deposit.

20.4(8) Unclaimed deposits. The utility shall make a reasonable effort to return each unclaimed deposit and accrued interest after the termination of the services for which the deposit was made. The utility shall maintain a record of deposit information for at least two years or until such time as the deposit, together with accrued interest, escheats to the state pursuant to Iowa Code section 556.4, at which time the record and deposit, together with accrued interest less any lawful deductions, shall be sent to the state treasurer pursuant to Iowa Code section 556.11.

20.4(9) Customer bill forms. Each customer shall be informed as promptly as possible following the reading of the customer's meter, on bill form or otherwise, of the following:

- a. The reading of the meter at the beginning and at the end of the period for which the bill is rendered.
- b. The dates on which the meter was read, at the beginning and end of the billing period.
- c. The number and kind of units metered.
- d. The applicable rate schedule, or identification of the applicable rate schedule.
- e. The account balance brought forward and amount of each net charge for rate-schedule-priced utility service, sales tax, other taxes, late payment charge, and total amount currently due. In the case of prepayment meters, the amount of money collected shall be shown.
- f. The last date for timely payment shall be clearly shown and shall be not less than 20 days after the bill is rendered.
- g. A distinct marking to identify an estimated bill.
- h. A distinct marking to identify a minimum bill.
- i. Any conversions from meter reading units to billing units, or any calculations to determine billing units from recording or other devices, or any other factors, such as sliding scale or automatic adjustment and amount of sales tax adjustments used in determining the bill.
- j. Customer billing information alternate. A utility serving less than 5000 electric customers may provide the information in 20.4(9) on bill form or otherwise. If the utility elects not to provide the information of 20.4(9), it shall advise the customer, on bill form or by bill insert, that such information can be obtained by contacting the utility's local office.

20.4(10) Rescinded, effective 7/1/81.

20.4(11) Payment agreements.

a. *Availability of a first payment agreement.* When a residential customer cannot pay in full a delinquent bill for utility service or has an outstanding debt to the utility for residential utility service and is not in default of a payment agreement with the utility, a utility shall offer the customer an opportunity to enter into a reasonable payment agreement.

b. *Reasonableness.* Whether a payment agreement is reasonable will be determined by considering the current household income, ability to pay, payment history including prior defaults on similar agreements, the size of the bill, the amount of time and the reasons why the bill has been outstanding, and any special circumstances creating extreme hardships within the household. The utility may require the person to confirm financial difficulty with an acknowledgment from the department of human services or another agency.

c. *Terms of payment agreements.*

(1) *First payment agreement.* The utility shall offer customers who have received a disconnection notice or have been disconnected 120 days or less and who are not in default of a payment agreement the option of spreading payments evenly over at least 12 months by paying specific amounts at scheduled times. The utility shall offer customers who have been disconnected more than 120 days and who are not in default of a payment agreement the option of spreading payments evenly over at least 6 months by paying specific amounts at scheduled times.

1. The agreement shall also include provision for payment of the current account. The agreement negotiations and periodic payment terms shall comply with tariff provisions which are consistent with these rules. The utility may also require the customer to enter into a level payment plan to pay the current bill.

2. When the customer makes the agreement in person, a signed copy of the agreement shall be provided to the customer.

3. The utility may offer the customer the option of making the agreement over the telephone or through electronic transmission. When the customer makes the agreement over the telephone or through electronic transmission, the utility shall render to the customer a written document reflecting the terms and conditions of the agreement within three days of the date the parties entered into the oral agreement or electronic agreement. The document will be considered rendered to the customer when addressed to the customer's last-known address and deposited in the U.S. mail with postage prepaid. If delivery is by other than U.S. mail, the document shall be considered rendered to the customer when delivered to the last-known address of the person responsible for payment for the service. The document shall state that unless the customer notifies the utility within ten days from the date the document is rendered, it will be deemed that the customer accepts the terms as reflected in the written document. The document stating the terms and agreements shall include the address and a toll-free or collect telephone number where a qualified representative can be reached. By making the first payment, the customer confirms acceptance of the terms of the oral agreement or electronic agreement.

4. Each customer entering into a first payment agreement shall be granted at least one late payment that is made four days or less beyond the due date for payment and the first payment agreement shall remain in effect.

(2) *Second payment agreement.* The utility shall offer a second payment agreement to a customer who is in default of a first payment agreement if the customer has made at least two consecutive full payments under the first payment agreement. The second payment agreement shall be for the same term as or longer than the term of the first payment agreement. The customer shall be required to pay for current service in addition to the monthly payments under the second payment agreement and may be required to make the first payment up-front as a condition of entering into the second payment agreement. The utility may also require the customer to enter into a level payment plan to pay the current bill. The utility may offer additional payment agreements to the customer.

d. *Refusal by utility.* A customer may offer the utility a proposed payment agreement. If the utility and the customer do not reach an agreement, the utility may refuse the offer orally, but the utility must render a written refusal to the customer, stating the reason for the refusal, within three days of the oral notification. The written refusal shall be considered rendered to the customer when addressed to the customer's last-known address and deposited in the U.S. mail with postage prepaid. If delivery is by other than U.S. mail, the written refusal shall be considered rendered to the customer when handed to the customer or when delivered to the last-known address of the person responsible for the payment for the service.

A customer may ask the board for assistance in working out a reasonable payment agreement. The request for assistance must be made to the board within ten days after the rendering of the written refusal. During the review of this request, the utility shall not disconnect the service.

20.4(12) Bill payment terms. The bill shall be considered rendered to the customer when deposited in the U.S. mail with postage prepaid. If delivery is by other than U.S. mail, the bill shall be considered rendered when delivered to the last-known address of the party responsible for payment. There shall not be less than 20 days between the rendering of a bill and the date by which the account becomes delinquent. Bills for customers on more frequent billing intervals under subrule 20.3(6) may not be considered delinquent less than 5 days from the date of rendering. However, a late payment charge may not be assessed if payment is received within 20 days of the date the bill is rendered.

a. The date of delinquency for all residential customers or other customers whose consumption is less than 3,000 kWh per month, shall be changeable for cause in writing; such as, but not limited to, 15 days from approximate date each month upon which income is received by the person responsible for payment. In no case, however, shall the utility be required to delay the date of delinquency more than 30 days beyond the date of preparation of the previous bill.

b. In any case where net and gross amounts are billed to customers, the difference between net and gross is a late payment charge and is valid only when part of a delinquent bill payment. A utility's late payment charge shall not exceed 1.5 percent per month of the past due amount. No collection fee may be levied in addition to this late payment charge. This rule does not prohibit cost-justified charges for disconnection and reconnection of service.

c. If the customer makes partial payment in a timely manner, and does not designate the service or product for which payment is made, the payment shall be credited pro rata between the bill for utility services and related taxes.

d. Each account shall be granted not less than one complete forgiveness of a late payment charge each calendar year. The utility's rules shall be definitive that on one monthly bill in each period of eligibility, the utility will accept the net amount of such bill as full payment for such month after expiration of the net payment period. The rules shall state how the customer is notified that the eligibility has been used. Complete forgiveness prohibits any effect upon the credit rating of the customer or collection of late payment charge.

e. Level payment plan. All residential customers or other customers whose consumption is less than 3,000 kWh per month may select a plan of level payments. The rules for such plan shall include at least the following:

(1) Be offered when the customer initially requests service.

(2) Have a date of delinquency changeable for cause in writing; such as, but not limited to, 15 days from approximate date each month upon which income is received by the person responsible for payment. The utility's rules may provide that the delinquency date may not be changed to a date later than 30 days after the date of preparation of the previous bill.

(3) Provide for entry into the level payment plan anytime during the calendar year. The month of entry shall be that customer's anniversary month.

(4) The billing period level payment to be the sum of estimated charges divided by the number of standard billing intervals, all for the next 12 consecutive months.

(5) A customer may request termination of the plan (or withdrawal from the plan) at any time. If the customer's account is in arrears, the customer may be required to bring the account to a current balance before termination or withdrawal. If there is a credit balance, the customer shall be allowed the option of obtaining a refund or applying the credit to charges for subsequent months' service.

(6) The level payment plan account balance on the anniversary date shall be carried forward and added to the estimated charges for service during the next year, and this total will be the basis for computing the next year's periodic billing interval level payment amount. The customer shall be given the option of applying any credit to payments of subsequent months' level payment amounts due or obtaining a refund of any credit in excess of \$25. The anniversary date account balance shall not carry forward an unpaid level payment bill. For delinquency on a level payment plan amount see subparagraph 20.4(12) "e"(9).

(7) The amount to be paid in each billing interval by a customer on a level payment plan shall be computed at the time of entry into the plan. It may be recomputed on each anniversary date, when requested by the customer, or whenever price, consumption, alone or in combination result in a new estimate differing by 10 percent or more from that in use.

When a customer's payment level is recomputed, the customer shall be notified of the revised payment amount and the reason for the change. The notice shall be served not less than 30 days prior to the date of delinquency for the first revised payment. The notice may accompany the bill prior to the bill that is affected by the revised payment amount.

(8) The account shall be balanced upon termination of service or withdrawal in accordance with the utility's tariff.

(9) Irrespective of the account balance, a delinquency in payment shall be subject to the same procedures as other accounts on late payment charge for the level payment amount. If the account balance is a debit, a delinquency in payment shall be subject to the same procedures as other accounts for collection or disconnection. If the account balance is a credit, the level payment plan shall terminate after 30 days of delinquency.

20.4(13) *Customer records.* The utility shall retain records as may be necessary to effectuate compliance with 20.4(14) and 20.6(6), but not less than three years. Records for customer shall show where applicable:

- a. kWh meter reading
- b. kWh consumption
- c. kW meter reading
- d. kW measured demand
- e. kW billing demand
- f. Total amount of bill.

20.4(14) *Adjustment of bills.*

a. *Meter error.* Whenever a meter creeps or whenever a metering installation is found upon any test to have an average error of more than 2.0 percent for watt-hour metering; or a demand metering error of more than 1.5 percent in addition to the errors allowed under accuracy of demand metering; an adjustment of bills for service for the period of inaccuracy shall be made in the case of overregistration and may be made in the case of underregistration. The amount of the adjustment shall be calculated on the basis that the metering equipment should be 100 percent accurate with respect to the testing equipment used to make the test. For watt-hour metering installations the average accuracy shall be the arithmetic average of the percent registration at 10 percent of rated test current and at 100 percent of rated test current giving the 100 percent of rated test current registration a weight of four and the 10 percent of rated test current registration a weight of one.

b. *Determination of adjustment.* Recalculation of bills shall be on the basis of actual monthly consumption except that if service has been measured by self-contained single-phase meters or three-wire network meters and involves no billing other than for kilowatt-hours, the recalculation of bills may be based on the average monthly consumption determined from the most recent 36 months, consumption data.

When the average error cannot be determined by test because of failure of part or all of the metering equipment, it shall be permissible to use the registration of check metering installations, if any, or to estimate the quantity of energy consumed based on available data. The customer must be advised of the failure and of the basis for the estimate of quantity billed. The periods of error shall be used as defined in immediately following subparagraphs (1) and (2).

(1) *Overregistration.* If the date when overregistration began can be determined, such date shall be the starting point for determination of the amount of the adjustment. If the date when overregistration began cannot be determined, it shall be assumed that the error has existed for the shortest time period calculated as one-half the time since the meter was installed, or one-half the time elapsed since the last meter test unless otherwise ordered by the board.

The overregistration due to creep shall be calculated by timing the rate of creeping and assuming that the creeping affected the registration of the meter for 25 percent of the time since the more recent of either metering installation or last previous test.

(2) *Underregistration.* If the date when underregistration began can be determined, it shall be the starting point for determination of the amount of the adjustment except that billing adjustment shall be limited to the preceding six months. If the date when underregistration began cannot be determined, it shall be assumed that the error has existed for one-half of the time elapsed since the more recent of either meter installation or the last meter test, except that billing adjustment shall be limited to the preceding six months unless otherwise ordered by the board.

The underregistration due to creep shall be calculated by timing the rate of creeping and assuming that this creeping affected the registration for 25 percent of the time since the more recent of either metering installation or last previous test, except that billing adjustment shall be limited to the preceding six months.

c. Refunds. If the recalculated bills indicate that \$5 or more is due an existing customer or \$10 or more is due a person no longer a customer of the utility, the tariff shall provide refunding of the full amount of the calculated difference between the amount paid and the recalculated amount. Refunds shall be made to the two most recent customers who received service through the metering installation found to be in error. In the case of a previous customer who is no longer a customer of the utility, a notice of the amount subject to refund shall be mailed to such previous customer at the last-known address, and the utility shall, upon demand made within three months thereafter, refund the same.

Refunds shall be completed within six months following the date of the metering installation test.

d. Back billing. A utility may not back bill due to underregistration unless a minimum back bill amount is specified in its tariff. The minimum amount specified for back billing shall not be less than, but may be greater than, \$5 for an existing customer or \$10 for a former customer. All recalculations resulting in an amount due equal or greater than the tariff specified minimum shall result in issuance of a back bill.

Back billings shall be rendered no later than six months following the date of the metering installation test.

e. Overcharges. When a customer has been overcharged as a result of incorrect reading of the meter, incorrect application of the rate schedule, incorrect connection of the metering installation or other similar reasons, the amount of the overcharge shall be adjusted, refunded or credited to the customer. The time period for which the utility is required to adjust, refund, or credit the customer's bill shall not exceed five years unless otherwise ordered by the board.

f. Undercharges. When a customer has been undercharged as a result of incorrect reading of the meter, incorrect application of the rate schedule, incorrect connection of the meter or other similar reasons, the amount of the undercharge may be billed to the customer. The period for which the utility may adjust for the undercharge shall not exceed five years unless otherwise ordered by the board. The maximum back bill shall not exceed the dollar amount equivalent to the tariffed rate for like charges (e.g., usage-based, fixed or service charges) in the 12 months preceding discovery of the error unless otherwise ordered by the board.

g. Credits and explanations. Credits due a customer because of meter inaccuracies, errors in billing, or misapplication of rates shall be separately identified.

20.4(15) Refusal or disconnection of service. A utility shall refuse service or disconnect service to a customer, as defined in subrule 20.1(3), in accordance with tariffs that are consistent with these rules.

a. The utility shall give written notice of pending disconnection except as specified in paragraph 20.4(15) "b." The notice shall set forth the reason for the notice and the final date by which the account is to be settled or specific action taken. The notice shall be considered rendered to the customer when addressed to the customer's last-known address and deposited in the U.S. mail with postage prepaid. If delivery is by other than U.S. mail, the notice shall be considered rendered when delivered to the last-known address of the person responsible for payment for the service. The date for disconnection of service shall be not less than 12 days after the notice is rendered. The date for disconnection of service for customers on shorter billing intervals under subrule 20.3(6) shall not be less than 24 hours after the notice is posted at the service premises.

One written notice, including all reasons for the notice, shall be given where more than one cause exists for disconnection of service. In determining the final date by which the account is to be settled or other specific action taken, the days of notice for the causes shall be concurrent.

b. Service may be disconnected without notice:

- (1) In the event of a condition on the customer's premises determined by the utility to be hazardous.
- (2) In the event of customer use of equipment in a manner which adversely affects the utility's equipment or the utility's service to others.
- (3) In the event of tampering with the equipment furnished and owned by the utility. For the purposes of this subrule, a broken or absent meter seal alone shall not constitute tampering.
- (4) In the event of unauthorized use.

c. Service may be disconnected or refused after proper notice:

- (1) For violation of or noncompliance with the utility's rules on file with the board.
- (2) For failure of the customer to furnish the service equipment, permits, certificates, or rights-of-way which are specified to be furnished, in the utility's rules filed with the board, as conditions of obtaining service, or for the withdrawal of that same equipment, or for the termination of those same permissions or rights, or for the failure of the customer to fulfill the contractual obligations imposed as conditions of obtaining service by any contract filed with and subject to the regulatory authority of the board.
- (3) For failure of the customer to permit the utility reasonable access to the utility's equipment.

d. Service may be refused or disconnected after proper notice for nonpayment of a bill or deposit, except as restricted by subrules 20.4(16) and 20.4(17), provided that the utility has complied with the following provisions when applicable:

- (1) Given the customer a reasonable opportunity to dispute the reason for the disconnection or refusal.
- (2) Given the customer, and any other person or agency designated by the customer, written notice that the customer has at least 12 days in which to make settlement of the account to avoid disconnection and a written summary of the rights and responsibilities available. Customers billed more frequently than monthly pursuant to subrule 20.3(6) shall be given posted written notice that they have 24 hours to make settlement of the account to avoid disconnection and a written summary of the rights and responsibilities. All written notices shall include a toll-free or collect telephone number where a utility representative qualified to provide additional information about the disconnection can be reached. Each utility representative must provide the representative's name and have immediate access to current, detailed information concerning the customer's account and previous contacts with the utility.

(3) The summary of the rights and responsibilities must be approved by the board. Any utility providing electric service and defined as a public utility in Iowa Code section 476.1 which does not use the standard form set forth below for customers billed monthly shall submit to the board an original and six copies of its proposed form for approval. A utility billing a combination customer for both gas and electric service may modify the standard form to replace each use of the word "electric" with the words "gas and electric" in all instances.

CUSTOMER RIGHTS AND RESPONSIBILITIES TO AVOID SHUTOFF OF ELECTRIC SERVICE FOR NONPAYMENT

1. What can I do if I receive a notice from the utility that says my service will be shut off because I have a past due bill?

- a. Pay the bill in full; or
- b. Enter into a reasonable payment plan with the utility (see #2 below); or
- c. Apply for and become eligible for low-income energy assistance (see #3 below); or
- d. Give the utility a written statement from a doctor or public health official stating that shutting off your electric service would pose an especial health danger for a person living at the residence (see #4 below); or
- e. Tell the utility if you think part of the amount shown on the bill is wrong. However, you must still pay the part of the bill you agree you owe the utility (see #5 below).

2. How do I go about making a reasonable payment plan? (Residential customers only)

- a. Contact the utility as soon as you know you cannot pay the amount you owe. If you cannot pay all the money you owe at one time, the utility may offer you a payment plan that spreads payments evenly over at least 12 months. The plan may be longer depending on your financial situation.
- b. If you have not made the payments you promised in a previous payment plan with the utility and still owe money, you may qualify for a second payment agreement under certain conditions.
- c. If you do not make the payments you promise, the utility may shut off your utility service on one day's notice unless all the money you owe the utility is paid or you enter into another payment agreement.

3. How do I apply for low-income energy assistance? (Residential customers only)

- a. Contact the local community action agency in your area (see attached list); or
- b. Contact the Division of Community Action Agencies at the Iowa Department of Human Rights, Lucas State Office Building, Des Moines, Iowa 50319; telephone (515)281-0859. To prevent disconnection, you must contact the utility prior to disconnection of your service.
- c. To avoid disconnection, you must apply for energy assistance before your service is shut off. Notify your utility that you may be eligible and have applied for energy assistance. Once your service has been disconnected, it will not be reconnected based on approval for energy assistance.
- d. Being certified eligible for energy assistance will prevent your service from being disconnected from November 1 through April 1.

4. What if someone living at the residence has a serious health condition? (Residential customers only)

Contact the utility if you believe this is the case. Contact your doctor or a public health official and ask the doctor or health official to contact the utility and state that shutting off your utility service would pose an especial health danger for a person living at your residence. The doctor or public health official must provide a written statement to the utility office within 5 days of when your doctor or public health official notifies the utility of the health condition; otherwise, your utility service may be shut off. If the utility receives this written statement, your service will not be shut off for 30 days. This 30-day delay is to allow you time to arrange payment of your utility bill or find other living arrangements. After 30 days, your service may be shut off if payment arrangements have not been made.

5. What should I do if I believe my bill is not correct?

You may dispute your utility bill. You must tell the utility that you dispute the bill. You must pay the part of the bill you think is correct. If you do this, the utility will not shut off your service for 45 days from the date the bill was mailed while you and the utility work out the dispute over the part of the bill you think is incorrect. You may ask the Iowa Utilities Board for assistance in resolving the dispute. (See #9 below.)

6. When can the utility shut off my utility service because I have not paid my bill?

- a. Your utility can shut off service between the hours of 6 a.m. and 2 p.m., Monday through Friday.
- b. The utility will not shut off your service on nights, weekends, or holidays for nonpayment of a bill.
- c. The utility will not shut off your service if you enter into a reasonable payment plan to pay the overdue amount (see #2 above).
- d. The utility will not shut off your service if the temperature is forecasted to be 20 degrees Fahrenheit or colder during the following 24-hour period, including the day your service is scheduled to be shut off.
- e. If you have qualified for low-income energy assistance, the utility cannot shut off your service from November 1 through April 1. However, you will still owe the utility for the service used during this time.
- f. The utility will not shut off your service if you have notified the utility that you dispute a portion of your bill and you pay the part of the bill that you agree is correct.

7. How will I be told the utility is going to shut off my service?

- a. You must be given a written notice at least 12 days before the utility service can be shut off for nonpayment. This notice will include the reason for shutting off your service.
- b. If you have not made payments required by an agreed-upon payment plan, your service may be disconnected with only one day's notice.
- c. The utility must also try to reach you by telephone or in person before it shuts off your service. From November 1 through April 1, if the utility cannot reach you by telephone or in person, the utility will put a written notice on the door of your residence to tell you that your utility service will be shut off.

8. If service is shut off, when will it be turned back on?

a. The utility will turn your service back on if you pay the whole amount you owe or agree to a reasonable payment plan (see #2 above).

b. If you make your payment during regular business hours, or by 7 p.m. for utilities permitting such payment or other arrangements after regular business hours, the utility must make a reasonable effort to turn your service back on that day. If service cannot reasonably be turned on that same day, the utility must do it by 11 a.m. the next day.

c. The utility may charge you a fee to turn your service back on. Those fees may be higher in the evening or on weekends, so you may ask that your service be turned on during normal utility business hours.

9. Is there any other help available besides my utility?

If the utility has not been able to help you with your problem, you may contact the Iowa Utilities Board toll-free at 1-877-565-4450. You may also write the Iowa Utilities Board at 350 Maple Street, Des Moines, Iowa 50319-0069, or by E-mail at iubcustomer@iub.state.ia.us. Low-income customers may also be eligible for free legal assistance from Iowa Legal Aid, and may contact Legal Aid at 1-800-532-1275.

(4) If the utility has adopted a service limitation policy pursuant to subrule 20.4(23), the following paragraph shall be appended to the end of the standard form for the summary of rights and remedies, as set forth in subparagraph 20.4(15)“d”(3):

Service limitation: We have adopted a policy of service limitation before disconnection. You may be qualified for service limitation rather than disconnection. To see if you qualify, contact our business office.

(5) When disconnecting service to a residence, made a diligent attempt to contact, by telephone or in person, the customer responsible for payment for service to the residence to inform the customer of the pending disconnection and the customer’s rights and responsibilities. During the period from November 1 through April 1, if the attempt at customer contact fails, the premises shall be posted at least one day prior to disconnection with a notice informing the customer of the pending disconnection and rights and responsibilities available to avoid disconnection.

If an attempt at personal or telephone contact of a customer occupying a rental unit has been unsuccessful, the landlord of the rental unit, if known, shall be contacted to determine if the customer is still in occupancy and, if so, the customer’s present location. The landlord shall also be informed of the date when service may be disconnected.

If the disconnection will affect occupants of residential units leased from the customer, the premises of any building known by the utility to contain residential units affected by disconnection must be posted, at least two days prior to disconnection, with a notice informing any occupants of the date when service will be disconnected and the reasons for the disconnection.

(6) Disputed bill. If the customer has received notice of disconnection and has a dispute concerning a bill for electric utility service, the utility may require the customer to pay a sum of money equal to the amount of the undisputed portion of the bill pending settlement and thereby avoid disconnection of service. A utility shall delay disconnection for nonpayment of the disputed bill for up to 45 days after the rendering of the bill if the customer pays the undisputed amount. The 45 days shall be extended by up to 60 days if requested of the utility by the board in the event the customer files a written complaint with the board in compliance with 199—Chapter 6.

(7) Special circumstances. Disconnection of a residential customer may take place only between the hours of 6 a.m. and 2 p.m. on a weekday and not on weekends or holidays. If a disconnected customer makes payment or other arrangements during normal business hours, or by 7 p.m. for utilities permitting such payment or other arrangements after normal business hours, all reasonable efforts shall be made to reconnect the customer that day. If a disconnected customer makes payment or other arrangements after 7 p.m., all reasonable efforts shall be made to reconnect the customer not later than 11 a.m. the next day.

(8) Severe cold weather. A disconnection may not take place where electricity is used as the only source of space heating or to control or operate the only space heating equipment at the residence on any day when the National Weather Service forecast for the following 24 hours covering the area in which the residence is located includes a forecast that the temperature will be 20 degrees Fahrenheit or colder. In any case where the utility has posted a disconnect notice in compliance with subparagraph 20.4(15) "d"(5) but is precluded from disconnecting service because of a National Weather Service forecast, the utility may immediately proceed with appropriate disconnection procedures, without further notice, when the temperature in the area where the residence is located rises above 20 degrees Fahrenheit and is forecasted to be above 20 degrees Fahrenheit for at least 24 hours, unless the customer has paid in full the past due amount or is entitled to postponement of disconnection under some other provision of paragraph 20.4(15) "d."

(9) Health of a resident. Disconnection of a residential customer shall be postponed if the disconnection of service would present an especial danger to the health of any permanent resident of the premises. An especial danger to health is indicated if a person appears to be seriously impaired and may, because of mental or physical problems, be unable to manage the person's own resources, to carry out activities of daily living or to be protected from neglect or hazardous situations without assistance from others. Indicators of an especial danger to health include but are not limited to: age, infirmity, or mental incapacitation; serious illness; physical disability, including blindness and limited mobility; and any other factual circumstances which indicate a severe or hazardous health situation.

The utility may require written verification of the especial danger to health by a physician or a public health official, including the name of the person endangered; a statement that the person is a resident of the premises in question; the name, business address, and telephone number of the certifying party; the nature of the health danger; and approximately how long the danger will continue. Initial verification by the verifying party may be by telephone if written verification is forwarded to the utility within five days.

Verification shall postpone disconnection for 30 days. In the event service is terminated within 14 days prior to verification of illness by or for a qualifying resident, service shall be restored to that residence if a proper verification is thereafter made in accordance with the foregoing provisions. If the customer does not enter into a reasonable payment agreement for the retirement of the unpaid balance of the account within the first 30 days and does not keep the current account paid during the period that the unpaid balance is to be retired, the customer is subject to disconnection pursuant to paragraph 20.4(15) "f."

(10) Winter energy assistance (November 1 through April 1). If the utility is informed that the customer's household may qualify for winter energy assistance or weatherization funds, there shall be no disconnection of service for 30 days from the date the utility is notified to allow the customer time to obtain assistance. Disconnection shall not take place from November 1 through April 1 for a resident who is a head of household and who has been certified to the public utility by the community action agency as eligible for either the low-income home energy assistance program or weatherization assistance program.

e. Abnormal electric consumption. A customer who is subject to disconnection for nonpayment of bill, and who has electric consumption which appears to the customer to be abnormally high, may request the utility to provide assistance in identifying the factors contributing to this usage pattern and to suggest remedial measures. The utility shall provide assistance by discussing patterns of electric usage which may be readily identifiable, suggesting that an energy audit be conducted, and identifying sources of energy conservation information and financial assistance which may be available to the customer.

f. A utility may disconnect electric service without the written 12-day notice for failure of the customer to comply with the terms of a payment agreement, except as provided in numbered paragraph 20.4(11)“c”(1)“4,” provided the utility complies with the provisions of paragraph 20.4(15)“d.”

g. The utility shall, prior to November 1, mail customers a notice describing the availability of winter energy assistance funds and the application process. The notice must be of a type size that is easily legible and conspicuous and must contain the information set out by the state agency administering the assistance program. A utility serving fewer than 25,000 customers may publish the notice in a customer newsletter in lieu of mailing. A utility serving fewer than 6,000 customers may publish the notice in an advertisement in a local newspaper of general circulation or shopper’s guide.

h. A utility may disconnect electric service without the written 12-day notice for failure of a residential customer who has had service limited in accordance with subrule 20.4(23) to pay the full amount due for past service or to enter into a reasonable payment agreement, provided that:

(1) The minimum time period, as specified in the utility’s tariff, for the service limiter to remain in place prior to initiation of the disconnection procedure has elapsed;

(2) The requirements of paragraph 20.4(15)“f,” relating to in-person, telephone or posted notice, have been satisfied;

(3) The requirements of subparagraphs 20.4(15)“d”(7) and (8), relating to time and temperature restrictions on disconnection are satisfied, to the extent applicable; and

(4) The requirements of subparagraph 20.4(15)“d”(9), relating to health restrictions on disconnection are satisfied, to the extent applicable.

20.4(16) *Insufficient reasons for denying service.* The following shall not constitute sufficient cause for refusal of service to a customer:

a. Delinquency in payment for service by a previous occupant of the premises to be served.

b. Failure to pay for merchandise purchased from the utility.

c. Failure to pay for a different type or class of public utility service.

d. Failure to pay the bill of another customer as guarantor thereof.

e. Failure to pay the back bill rendered in accordance with paragraph 20.4(14)“d” (slow meters).

f. Failure to pay a bill rendered in accordance with paragraph 20.4(14)“f.”

g. Failure of a residential customer to pay a deposit during the period November 1 through April 1 for the location at which the customer has been receiving service.

h. Delinquency in payment for service by an occupant if the customer applying for service is creditworthy and able to satisfy any deposit requirements.

20.4(17) *When disconnection prohibited.* No disconnection may take place from November 1 through April 1 for a resident who has been certified to the public utility by the local community action agency as being eligible for either the low-income home energy assistance program or weatherization assistance program.

20.4(18) *Estimated demand.* Upon request of the customer and provided the customer's demand is estimated for billing purposes, the utility shall measure the demand during the customer's normal operation and use the measured demand for billing.

20.4(19) *Servicing utilization control equipment.* Each utility shall service and maintain any equipment it uses on customer's premises and shall correctly set and keep in proper adjustment any thermostats, clocks, relays, time switches or other devices which control the customer's service in accordance with the provisions in the utility's rate schedules.

20.4(20) *Customer complaints.* Complaints concerning the charges, practices, facilities or service of the utility shall be investigated promptly and thoroughly. The utility shall keep such records of customer complaints as will enable it to review and analyze its procedures and actions.

a. Each utility shall provide in its filed tariff a concise, fully informative procedure for the resolution of customer complaints.

b. The utility shall take reasonable steps to ensure that customers unable to travel shall not be denied the right to be heard.

c. The final step in a complaint hearing and review procedure shall be a filing for board resolution of the issues.

20.4(21) *Temporary service.* When the utility renders temporary service to a customer it may require that the customer bear all of the cost of installing and removing the service facilities in excess of any salvage realized.

20.4(22) *Change in type of service.* If a change in the type of service, such as from 25- to 60-cycle or from direct or alternating current, or a change in voltage to a customer's substation, is effected at the insistence of the utility and not solely by reason of increase in the customer's load or change in the character thereof, the utility shall share equitably in the cost of changing the equipment of the customer affected as determined by the board in the absence of agreement between utility and customer. In general, the customer should be protected against or reimbursed for the following losses and expenses to an appropriate degree:

a. Loss of value in electrical power utilization equipment.

b. Cost of changes in wiring, and

c. Cost of removing old and installing new utilization equipment.

20.4(23) *Limitation of service.* The utility shall have the option of adopting a policy for limiting the service of a residential customer for nonpayment of a bill or deposit, or for noncompliance with the terms of a payment agreement, as a measure to be taken prior to disconnection of the customer. Electric-heating residential customers shall not have limited service between November 1 and April 1. For purposes of this rule, "electric-heating" shall mean heating by means of a fixed-installation electric appliance which serves as the primary heat source.

A service limitation policy, if adopted by the utility, shall be set forth in the utility's tariff and shall specify some minimum time period for the service limiter to remain in place prior to the initiation of the disconnection procedure set forth in 20.4(15) "j." A service limitation policy, if adopted by the utility, shall be applied uniformly to all of the utility's residential customers, as specified above, to the extent that adaptation of service limiters to customer meters is feasible, and to the extent that customer meters are readily accessible to those installing the service limiters and to the customers. Any other exceptions to uniform application of this policy must be on the basis of rational, specific criteria set forth in the utility's tariff receiving prior approval by the board.

Notice of a pending service limitation shall be rendered, and electric service limited, as set forth in the tariff.

Upon installing a service limiter, the utility shall post the premises with a notice informing the occupant of the installation of the service limiter, its purpose, how it operates, and how it can be reset by the occupant.

The notice of pending service limitation required by these rules shall satisfy the requirements of subrule 20.4(15), substituting “service limitation” for “disconnection” or “refusal or disconnection of service” throughout the rule.

Service may be limited for nonpayment of bill or deposit, except as restricted by subrule 20.4(16), relating to insufficient reasons for denying service, provided that the utility has satisfied the requirements of 20.4(15) “*h*,” excluding the portion of subparagraph (4) “special circumstances” relating to same-day reconnection, and substituting “service limitation” for “disconnection” (and all other forms of that term) throughout that subrule. An installed service limiter shall be removed no later than the next working day after the residential customer has paid the delinquent bill or deposit in full or has entered into a reasonable payment agreement with the utility.

Service may be limited without the written 12-day notice for failure of the customer to comply with the terms of a payment agreement, provided that the requirements of 20.4(15) “*i*” have been satisfied, excluding the portion of subparagraph (2) relating to same-day reconnection, and substituting “service limitation” for “disconnection” (and all other forms of that term) throughout that subrule.

These rules are intended to implement Iowa Code sections 476.6, 476.8, 476.20 and 476.54.

199—20.5(476) Engineering practice.

20.5(1) Requirement for good engineering practice. The electric plant of the utility shall be constructed, installed, maintained and operated in accordance with accepted good engineering practice in the electric industry to assure, as far as reasonably possible, continuity of service, uniformity in the quality of service furnished, and the safety of persons and property.

20.5(2) Standards incorporated by reference. The utility shall use the applicable provisions in the publications listed below as standards of accepted good practice unless otherwise ordered by the board.

- a. Iowa Electrical Safety Code, as defined in IAC [199], Chapter 25.
- b. National Electrical Code, ANSI/NFPA 70-2002.
- c. American National Standard Requirements for Instrument Transformers, ANSI/IEEE C57.13.1-1981 (R1999); and C57.13.3-1983 (R1991).
- d. American National Standard Requirements for Electrical Analog Indicating Instruments, ANSI C39.1-1981 (R1992).
- e. Rescinded IAB 11/19/97, effective 12/24/97.
- f. American National Standard Voltage Ratings for Electric Power Systems and Equipment (60Hz), ANSI C84.1-1995.
- g. Grounding of Industrial and Commercial Power Systems, IEEE 142-1991.
- h. IEEE Standard 1159-1995, IEEE Recommended Practice for Monitoring Electric Power Quality or any successor standard.
- i. IEEE Standard 519-1992, IEEE Recommended Practices and Requirements for Harmonic Control in Electric Power Systems or its successor standard.
- j. At railroad crossings, 199 IAC 42.6(476), “Engineering standards for electric and communications lines.”

20.5(3) Adequacy of supply and reliability of service. The generating capacity of the utility's plant, supplemented by the electric power regularly available from other sources, must be sufficiently large to meet all normal demands for service and provide a reasonable reserve for emergencies.

In appraising adequacy of supply the board will segregate electric utilities into two classes viz., those having high capacity transmission interconnections with other electrical utilities and those which lack such interconnection and are therefore completely dependent upon the firm generating capacity of the utility's own generating facilities.

a. In the case of utilities having interconnecting ties with other utilities, the board will, upon appraising adequacy of supply, take appropriate notice of the utility's recent past record, as of the date of appraisal, of any widespread service interruptions and any capacity shortages along with the consideration of the supply regularly available from other sources, the normal demands, and the required reserve for emergencies.

b. In the case of noninterconnected utilities the board will give attention to the maximum total coincident customer demand which could be satisfied without the use of the single element of plant equipment, the disability of which would produce the greatest reduction in total net plant productive capacity and also give attention to the normal demands for service and to the reasonable reserve for emergencies.

20.5(4) Electric transmission and distribution facilities. Rescinded IAB 11/13/02, effective 12/18/02.

20.5(5) Inspection of electric plant. Each utility shall adopt a written program for inspection of its electric plant in order to determine the necessity for replacement and repair in compliance with board rule 199—25.3(476,478).

This rule is intended to implement Iowa Code section 476.8 and 478.18.

199—20.6(476) Metering.

20.6(1) Inspection and testing program. Each utility shall adopt a written program for the inspection and testing of its meters to determine the necessity for adjustment, replacement or repair. The frequency of inspection and methods of testing shall be based on the utility's experience, manufacturer's recommendations, and accepted good practice. The publications listed in 20.6(3) are representative of accepted good practice. Each utility shall maintain inspecting and testing records for each meter and associated device until three years after its retirement.

20.6(2) Program content. The written program shall, at minimum, address the following subject areas:

- a.* Classification of meters by capacity, type, and any other factor considered pertinent.
- b.* Checking of new meters for acceptable accuracy before being placed in service.
- c.* Testing of in-service meters, including any associated instruments or corrective devices, for accuracy, adjustments or repairs. This may be accomplished by periodic tests at specified intervals or on the basis of a statistical sampling plan, but shall include meters removed from service for any reason.
- d.* Periodic calibration or testing of devices or instruments used by the utility to test meters.
- e.* The limits of meter accuracy considered acceptable by the utility.
- f.* The nature of meter and meter test records which will be maintained by the utility.

20.6(3) Accepted good practice. The following publications are considered to be representative of accepted good practice in matters of metering and meter testing:

- a.* American National Standard Code for Electricity Metering, ANSI C12.1-2001.
- b.* American National Standard for Solid-State Electricity Meters, ANSI C12.16-1991.
- c.* American National Standard for Cartridge-type Solid-State Pulse Recorders for Electricity Metering, ANSI C12.17-1991.

20.6(4) Meter adjustment. All meters and associated metering devices shall, when tested, be adjusted as closely as practicable to the condition of zero error.

20.6(5) Request tests. Upon request by a customer, a utility shall test the meter servicing that customer. A test need not be made more frequently than once in 18 months.

A written report of the test results shall be mailed to the customer within ten days of the completed test and a record of each test shall be kept on file at the utility's office. The utility shall give the customer or a representative of the customer the opportunity to be present while the test is conducted.

If the test finds the meter is accurate within the limits accepted by the utility in its meter inspection and testing program, the utility may charge the customer \$25 or the cost of conducting the test, whichever is less. The customer shall be advised of any potential charge before the meter is removed for testing.

20.6(6) Referee tests. Upon written request by a customer or utility, the board will conduct a referee test of a meter. A test need not be made more frequently than once in 18 months. The customer request shall be accompanied by a \$30 deposit in the form of a check or money order made payable to the utility.

Within five days of receipt of the written request and payment, the board shall forward the deposit to the utility and notify the utility of the requirement for a test. The utility shall, within 30 days after notification of the request, schedule the date, time and place of the test with the board and customer. The meter shall not be removed or adjusted before the test. The utility shall furnish all testing equipment and facilities for the test. If the tested meter is found to be more than 2 percent fast or 2 percent slow, the deposit will be returned to the party requesting the test and billing adjustments shall be made as required in 20.4(14). The board shall issue its report within 15 days after the test is conducted, with a copy to the customer and the utility.

20.6(7) Condition of meter. No meter that is known to be mechanically or electrically defective, or to have incorrect constants, or that has not been tested and adjusted if necessary in accordance with these rules shall be installed or continued in service. The capacity of the meter and the index mechanism shall be consistent with the electricity requirements of the customer.

199—20.7(476) Standards of quality of service.

20.7(1) Standard frequency. The standard frequency for alternating current distribution systems shall be 60 cycles per second. The frequency shall be maintained within limits which will permit the satisfactory operation of customer's clocks connected to the system.

20.7(2) Voltage limits retail. Each utility supplying electric service to ultimate customers shall provide service voltages in conformance with the standard at 20.5(2) "f."

20.7(3) Voltage balance. Where three-phase service is provided the utility shall exercise reasonable care to assure that the phase voltages are in balance. In no case shall the ratio of maximum voltage deviation from average to average voltage exceed .02.

20.7(4) Voltage limits, service for resale. The nominal voltage shall be as mutually agreed upon by the parties concerned. The allowable variation shall not exceed 7.5 percent above or below the agreed-upon nominal voltage without the express approval of the board.

20.7(5) Exceptions to voltage requirements. Voltage outside the limits specified will not be considered a violation when the variations:

- a. Arise from the action of the elements.
- b. Are infrequent fluctuations not exceeding five minutes, duration.
- c. Arise from service interruptions.
- d. Arise from temporary separation of parts of the system from the main system.
- e. Are from causes beyond the control of the utility.
- f. Do not exceed 10 percent above or below the standard nominal voltage, and service is at a distribution line or transmission line voltage with the retail customer providing voltage regulators.

20.7(6) Voltage surveys and records. Voltage measurements shall be made at the customer's entrance terminals. For single-phase service the measurement shall be made between the grounded conductor and the ungrounded conductors. For three-phase service the measurement shall be made between the phase wires.

20.7(7) Each utility shall make a sufficient number of voltage measurements, using recording voltmeters, in order to determine if voltages are in compliance with the requirements as stated in 20.7(2), 20.7(3), 20.7(4). All voltmeter records obtained under 20.7(7) shall be retained by the utility for at least two years and shall be available for inspection by the board's representatives. Notations on each chart shall indicate the following:

- a. The location where the voltage was taken.
- b. The time and date of the test.
- c. The results of the comparison with a working standard indicating voltmeter.

20.7(8) Equipment for voltage measurements.

- a. *Secondary standard indicating voltmeter.* Each utility shall have available at least one indicating voltmeter maintained with error no greater than 0.25 percent of full scale.
- b. *Working standard indicating voltmeters.* Each utility shall have at least two indicating voltmeters maintained so as to have as-left errors of no greater than 1 percent of full scale.
- c. *Recording voltmeters.* Each utility must have readily available at least two portable recording voltmeters with a rated accuracy of 1 percent of full scale.

20.7(9) Rescinded IAB 12/11/91, effective 1/15/92.

20.7(10) Extreme care must be exercised in the handling of standards and instruments to assure that their accuracy is not disturbed. Each standard shall be accompanied at all times by a certificate or calibration card, duly signed and dated, on which are recorded the corrections required to compensate for errors found at the customary test points at the time of the last previous test.

20.7(11) Planned interruptions shall be made at a time that will not cause unreasonable inconvenience to customers, and interruptions planned for longer than one hour shall be preceded by adequate notice to those who will be affected.

20.7(12) Power quality monitoring. Each utility shall investigate power quality complaints from its customers and determine if the cause of the problem is on the utility's systems. In addressing these problems, each utility shall implement to the extent reasonably practical the practices outlined in the standard given at 20.5(2) "h."

20.7(13) Harmonics. A harmonic is a sinusoidal component of the 60 cycles per second fundamental wave having a frequency that is an integral multiple of the fundamental frequency. When excessive harmonics problems arise, each electric utility shall investigate and take actions to rectify the problem. In addressing harmonics problems, the utility and the customer shall implement to the extent practicable and in conformance with prudent operation the practices outlined in the standard at 20.5(2) "i."

This rule is intended to implement Iowa Code sections 476.2 and 476.8.

199—20.8(476) Safety.

20.8(1) *Protective measures.* Each utility shall exercise reasonable care to reduce those hazards inherent in connection with its utility service and to which its employees, its customers, and the general public may be subjected and shall adopt and execute a safety program designed to protect the public and fitted to the size and type of its operations.

20.8(2) *Accident investigation and prevention.* The utility shall give reasonable assistance to the board in the investigation of the cause of accidents and in the determination of suitable means of preventing accidents.

20.8(3) *Reportable accidents.* Each utility shall maintain a summary of all reportable accidents, as defined in 199—25.5(476,478), arising from its operations.

20.8(4) *Grounding of secondary distribution system.* Unless otherwise specified by the board, each utility shall comply with, and shall encourage its customers to comply with, the applicable provisions of the acceptable standards listed in 20.5(2) for the grounding of secondary circuits and equipment.

Ground connections should be tested for resistance at the time of installation. The utility shall keep a record of all ground resistance measurements.

The utility shall establish a program of inspection so that all artificial grounds installed by it shall be inspected within reasonable periods of time.

199—20.9(476) Electric energy sliding scale or automatic adjustment. A rate-regulated utility's sliding scale or automatic adjustment of the unit charge for electric energy shall be an energy clause.

20.9(1) *Applicability.* A rate-regulated utility's sliding scale or automatic adjustment of electric utility energy rates shall recover from consumers only those costs which:

- Are incurred in supplying energy;
- Are beyond direct control of management;
- Are subject to sudden important change in level;
- Are an important factor in determining the total cost to serve; and
- Are readily, precisely, and continuously segregated in the accounts of the utility.

20.9(2) *Energy clause for rate-regulated utility.* Prior to each billing cycle, a rate-regulated utility shall determine and file for board approval the adjustment amount to be charged for each energy unit consumed under rates set by the board. The filing shall include all journal entries, invoices (except invoices for fuel, freight, and transportation), worksheets, and detailed supporting data used to determine the amount of the adjustment. The estimated amount of fossil fuel should be detailed to reflect the amount of fuel, transportation, and other costs.

The journal entries should reflect the following breakdown for each type of fuel: actual cost of fuel, transportation, and other costs. Items identified as other costs should be described and their inclusion as fuel costs should be justified. The utility shall also file detailed supporting data:

1. To show the actual amount of sales of energy by month for which an adjustment was utilized, and

2. To support the energy cost adjustment balance utilized in the monthly energy adjustment clause filings.

a. The energy adjustment shall provide for change of the price per kilowatt hour consumed under rates set by the board based upon the formulas provided below. The calculation shall be:

$$E_0 = \frac{EC_0 + EC_1}{EQ_0 + EQ_1} + \frac{A_1}{EJ_0 + EJ_1} - B$$

E_0 is the energy adjustment charge to be used in the next customer billing cycle rounded on a consistent basis to either the nearest 0.01¢/kWh or 0.001¢/kWh. For deliveries at voltages higher than secondary line voltages, appropriate factors should be applied to the adjustment charge to recognize the lower losses associated with these deliveries.

EC_0 is the estimated expense for energy in the month during which E_0 will be used.

EC_1 is the estimated expense for energy in the month prior to the month of EC_0 .

EQ_0 is the estimated electric energy to be consumed or delivered and entered in accounts 440, 442, 444-7, excluding energy from distinct interchange deliveries entered into account 447 and including intrautility energy service as included in accounts 448 and 929 of the Uniform System of Accounts during the month in which E_0 will be used.

EQ_1 is the estimated electric energy to be consumed or delivered and entered in accounts 440, 442, 444-7, excluding energy from distinct interchange deliveries entered in account 447 and including intrautility energy service as included in accounts 448 and 929 of the Uniform System of Accounts during the month prior to EQ_0 .

EJ_0 is the estimated electric energy to be consumed under rates set by the board in the month during which the energy adjustment charge (E_0) will be used in bill calculations.

EJ_1 is the estimated electric energy to be consumed under rates set by the board in the month prior to the month of EJ_0 .

A_1 is the beginning of the month energy cost adjustment account balance for the month of estimated consumption EJ_1 . This would be the most recent month's balance available from actual accounting data.

B is the amount of the electric energy cost included in the base rates of a utility's rate schedules.

b. The estimated energy cost ($EC_0 + EC_1$) shall be the estimated cost associated with EQ_0 and EQ_1 determined as the cost of:

(1) Fossil and nuclear fuel consumed in the utility's own plants and the utility's share of fossil and nuclear fuel consumed in jointly owned or leased plants. Fossil fuel shall include natural gas used for electric generation and the cost of fossil fuel transferred from account 151 to account 501 or 547 of the Uniform System of Accounts for Electric Utilities. Nuclear fuel shall be that shown in account 518 of the Uniform System of Accounts except that if account 518 contains any expense for fossil fuel which has already been included in the cost of fossil fuel, it shall be deducted from the account. (Paragraph C of account 518 includes the cost of other fuels used for ancillary steam facilities.)

(2) The cost of steam purchased, or transferred from another department of the utility or from others under a joint facility operating agreement, for use in prime movers producing electric energy (accounts 503 and 521).

(3) A deduction shall be made of the expenses of producing steam chargeable to others, to other utility departments under a joint operating agreement, or to other electric accounts outside the steam generation group of accounts (accounts 504 and 522).

(4) The cost of water used for hydraulic power generation. Water cost shall be limited to items of account 536 of the Uniform System of Accounts. For pumped storage projects the energy cost of pumping is included. Pumping energy cost shall be determined from the applicable costs of subparagraphs of paragraph 20.9(2)“b.”

(5) The energy costs paid for energy purchased under arrangements or contracts for firm power, operational control energy, outage energy, participation power, peaking power, and economy energy, as entered into account 555 of the Uniform System of Accounts, less the energy revenues to be recovered from corresponding sales, as entered in account 447 of the Uniform System of Accounts.

(6) Purchases from AEP facilities under rule 199—15.11(476).

(7) The weighted average costs of inventoried allowances used in generating electricity.

(8) The gains and losses from allowance sales occurring during the month.

(9) Eligible costs or credits associated with the utility’s annual reconciliation of its alternate energy purchase program under 199—paragraph 15.17(4)“b.”

c. The energy cost adjustment account balance (A) shall be the cumulative balance of any excess or deficiency which arises out of the difference between board recognized energy cost recovery and the amount recovered through application of energy charges to consumption under rates set by the board. Each monthly entry (D) into the energy cost adjustment account shall be the dollar amount determined from solution of the following equation (with proper adjustment for those deliveries at high voltage which for billing purposes recognized the lower losses associated with the high voltage deliveries).

$$D = \left[C_2 \times \frac{J_2}{Q_2} \right] - \left[J_2 \times (E_2 + B) \right]$$

C_2 is the actual expense for energy, calculated as set forth in 20.9(2)“b,” in the month prior to EJ_1 of 20.9(2)“a.”

J_2 is the actual energy consumed in the prior month under rates set by the board and recorded in accounts 440, 442 and 444-6 of the Uniform System of Accounts.

Q_2 is the actual total energy consumed or delivered in the prior month and recorded in accounts 440, 442, 444-7, excluding energy from distinct interchange deliveries entered in account 447, and including intrautility energy service as included in accounts 448 and 929 of the Uniform System of Accounts.

E_2 is the energy adjustment charge used for billing in the prior month.

B is the amount of the electric energy cost included in the base rates of a utility’s rate schedules.

d. Reserve account for nuclear generation. A rate-regulated utility owning nuclear generation or purchasing energy under a participation power agreement on nuclear generation may establish a reserve account. The reserve account will spread the higher cost of energy used to replace that normally received from nuclear sources. A surcharge would be added to each kilowatt hour from the nuclear source. The surcharges collected are credited to the reserve account. During an outage or reduced level of operation, replacement energy cost would be offset through debit to the reserve account. The debit would be based upon the cost differential between replacement energy cost and the average cost (including the surcharge) of energy from the nuclear capacity. A reserve account shall have credit and debit limitations equal in dollar amounts to the total cost differential for replacement energy during a normal refueling outage.

e. A rate-regulated utility desiring to collect expensed allowance costs and the gains and losses from allowance transactions through the energy adjustment must file with the board monthly reports including:

(1) The number and weighted average unit cost of allowances used during the month to offset sulfur dioxide emissions from the utility’s affected units;

- (2) The number and unit price of allowances purchased during the month;
- (3) The number and unit price of allowances sold during the month;
- (4) The weighted average unit cost of allowances remaining in inventory;
- (5) The dollar amount of any gain from an allowance sale occurring during the month;
- (6) The dollar amount of any loss from an allowance sale occurring during the month; and
- (7) Documentation of any gain or loss from an allowance sale occurring during the month.

f. A rate-regulated utility which proposes a new sliding scale or automatic adjustment clause of electric utility energy rates shall conform such clause with the rules.

20.9(3) *Optional energy clause for a rate-regulated utility which does not own generation.* A rate-regulated utility which does not own generation may adopt the energy adjustment clause of this subrule in lieu of that set forth in subrule 20.9(2). Prior to each billing cycle it shall determine and file for board approval the adjustment amount to be charged for each energy unit consumed under rates set by the board. The filing shall include all journal entries, invoices (except invoices for fuel, freight, and transportation), worksheets, and detailed supporting data used to determine the amount of the adjustment. The estimated amount of fossil fuel should be detailed to reflect the amount of fuel, transportation, and other costs.

The journal entries should reflect the following breakdown for each type of fuel: actual cost of fuel, transportation, and other costs. Items identified as other costs should be described and their inclusion as fuel costs should be justified. The utility shall also file detailed supporting data:

1. To show the actual amount of sales of energy by month for which an adjustment was utilized, and
2. To support the energy cost adjustment balance utilized in the monthly energy adjustment clause filings.
 - a. The energy adjustment charge shall provide for change of the price per kilowatt-hour consumed to equal the average cost per kilowatt hour delivered by the utility's system. The calculation shall be:

$$E_0 = \frac{C_2 + C_3 + C_4}{Q_2 + Q_3 + Q_4} - B$$

E_0 is the energy adjustment charge to be used in the next customer billing cycle rounded on a consistent basis to either the nearest 0.01¢/kWh or 0.001¢/kWh. For deliveries at voltages higher than secondary line voltages, appropriate factors should be applied to the adjustment charge to recognize the lower losses associated with these deliveries.

C_2 , C_3 and C_4 are the charges by the wholesale suppliers as recorded in account 555 offset by energy revenues from distinct interchange deliveries entered in account 447 of the Uniform System of Accounts for the first three of the four months prior to the month in which E_0 will be used.

Q_2 , Q_3 and Q_4 are the total electric energy delivered by the utility system, excluding energy from distinct interchange deliveries entered in account 447 during each of the months in which the expenses C_2 , C_3 and C_4 were incurred.

B is the amount of the electric energy cost included in the base rates of a utility's rate schedules.

b. A utility purchasing its total electric energy requirements may establish an energy cost adjustment account for which the cumulative balance is the excess or deficiency arising from the difference between commission-recognized energy cost recovery and the amount recovered through application of energy charges on jurisdictional consumption.

For a utility electing to use an energy cost adjustment account the calculation shall be:

$$E_0 = \frac{C_2 + C_3 + C_4}{Q_2 + Q_3 + Q_4} + \frac{A_2}{J_2 + J_3 + J_4} - B$$

E_0 is the energy adjustment charge to be used in the next customer billing cycle rounded on a consistent basis to either the nearest 0.01¢/kWh or 0.001¢/kWh. For deliveries at voltages higher than secondary line voltages, appropriate factors should be applied to the adjustment charge to recognize the lower losses associated with these deliveries.

C_2 , C_3 and C_4 are the charges by the wholesale suppliers as recorded in account 555 offset by energy revenues from distinct interchange deliveries entered in account 447 of the Uniform System of Accounts for the first three of the four months prior to the month in which E_0 will be used.

Q_2 , Q_3 and Q_4 are the total electric energy delivered by the utility system, excluding energy from distinct interchange deliveries entered in account 447 during each of the months in which the expenses C_2 , C_3 and C_4 were incurred.

A_2 is the end of the month energy cost adjustment account balance for the month of consumption J_2 . This would be the most recent month's balance available from actual accounting data.

J_2 , J_3 and J_4 are electric energy consumed under rates set by the board in the months corresponding to C_2 , C_3 and C_4 .

B is the amount of the electric energy cost included in the base rates of a utility's rate schedules.

c. The end of the month energy cost adjustment account balance (A) shall be the cumulative balance of any excess or deficiency which arises out of the difference between board recognized energy cost recovery and the amount recovered through application of energy charges to consumption under rates set by the board.

Each monthly entry (D) into the energy cost adjustment account shall be the dollar amount determined from solution of the following equation (with proper adjustment for those deliveries at high voltage which for billing purposes recognized the lower losses associated with the high voltage deliveries).

$$D = \left[C_2 \times \frac{J_2}{Q_2} \right] - \left[J_2 \times (E_2 + B) \right]$$

C_2 is the prior month charges by the wholesale suppliers as recorded in account 555 of the Uniform System of Accounts offset by energy revenues from distinct interchange deliveries entered in account 447.

J_2 is the electric energy consumed under jurisdictional rates in the prior month.

Q_2 is the electric energy delivered by the utility system, excluding energy from distinct interchange deliveries entered in account 447 in the prior month.

E_2 is the energy adjustment charge used for billing in the prior month.

B is the amount of the electric energy cost included in the base rates of a utility's rate schedules.

d. A utility with special conditions may petition the board for a waiver which would recognize its unique circumstances.

e. A utility which does not own generation and proposes a new sliding scale or automatic adjustment clause of electric utility rates shall conform such clause with the rules.

20.9(4) Annual review of energy clause. On or before each May 1, the board will notify each utility as to the two months of the previous calendar year for which fuel, freight, and transportation invoices will be required. Two copies of these invoices shall be filed with the board no later than the subsequent November 1.

This rule is intended to implement Iowa Code section 476.6(11).

199—20.10(476) Ratemaking standards.

20.10(1) Coverage. Standards for ratemaking shall apply to all rate-regulated utilities in the state of Iowa. The board may, by rule or by order in specific cases, exempt a utility or class of utilities from any or all ratemaking standards. The standards are recommended to all service-regulated utilities in this jurisdiction.

20.10(2) Cost of service. Rates charged by an electric utility for providing electric service to each class of electric consumers shall be designed, to the maximum extent practicable, to reasonably reflect the costs of providing electric service to the class. The methods used to determine class costs of service shall to the maximum extent practical permit identification of differences in cost-incurrence, for each class of electric consumers, attributable to daily and seasonal time of use of service, and permit identification of differences in cost-incurrence attributable to differences in demand, energy, and customer components of cost.

The design of rates should reasonably approximate a pricing methodology for any individual utility that would reflect the price system that would exist in a competitive market environment. For purposes of determining revenue requirements among customer classes, embedded costs shall be preferred. For purposes of determining rate designs within customer classes, long-run marginal cost approaches are preferred although embedded cost approaches may be considered reasonable.

Nothing in this rule shall authorize or require the recovery by an electric utility of revenues in excess of, or less than, the amount of revenues otherwise determined to be lawful by the board.

Guidelines for use in evaluating the acceptability of methods of class cost of service estimation include, but are not limited to, the following:

a. All usage of customer, demand, and energy components of service shall be considered new usage.

b. Customer classes shall be established on the primary basis of reasonably similar usage patterns within classes, even if this requires disaggregation or recombination of traditional customer classes.

c. Generating capacity estimates or allocations among and within classes shall recognize that utility systems are designed to serve both peak and off-peak demand, and shall attribute costs based upon both peak period demand and the contribution of off-peak period demand in determining generation mix. Generating capacity estimates and allocations among and within classes shall be based on load data for each class as described in 199—subrule 35.9(2).

d. Transmission and distribution capacity estimates or allocations among and within classes shall be demand-related based upon system usage patterns, and the load imposed by a class on the transmission or distribution capacity in question.

e. Customer cost component estimates or allocations shall include only costs of the distribution system from and including transformers, meters and associated customer service expenses.

f. Methods of cost estimates or allocations among customer classes shall recognize the differences in voltage levels and other service characteristics, and line losses among customer classes.

g. Methods of class cost of service determination which are consistent with zero customer, demand, or energy component costs or major categories of these, such as generation, transmission or distribution, shall be considered unacceptable methods.

h. Long-run marginal cost methods of class cost of service determination shall clearly reflect changes in total costs to the utility with respect to changes in the outputs of customer, demand, or energy components of electric services.

i. The use of an inverse elasticity approach to adjust long-run marginal cost-based rates to the revenue requirement shall be unacceptable. Other approaches will be considered on a case-by-case basis.

20.10(3) Declining block rates. The energy-related cost component of a rate, or the amount attributable to the energy-related cost component of a rate, charged by an electric utility for providing electric service during any period to any class of electric consumers, shall not decrease as kilowatt-hour consumption by such class increases during the period except to the extent that the utility demonstrates that the energy costs of providing electric service to such class decrease as consumption increases during the period.

20.10(4) Time-of-day rates. The rates charged by any electric utility for providing electric service to each class of electric consumers shall be on a time-of-day basis which reflects the cost of providing electric service to that class of electric consumers at different times of the day unless such rates are not cost-effective with respect to the class. These rates are cost-effective with respect to a class if the long-run benefits of the rate to the electric utility and its electric consumers in the class concerned are likely to exceed the metering costs and other costs associated with the use of the rates. Cost-based time-of-day rates shall be offered on an optional basis to electric consumers who do not otherwise qualify for the rates if consumers agree to pay the additional metering costs and other costs associated with the use of the rates.

20.10(5) Seasonal rates. The rates charged by an electric utility for providing electric service to each class of electric consumers may be on a seasonal basis which reflects the costs of providing service to the class of consumers at different seasons of the year to the extent that costs vary seasonally for the utility, if the board determines that seasonal rates are appropriate in an individual case.

20.10(6) Interruptible rates. Each electric utility shall offer each industrial and commercial electric consumer an interruptible rate which reflects the cost of providing interruptible service to the class of which the consumer is a member.

20.10(7) Load management techniques. Rescinded IAB 11/12/03, effective 12/17/03.

20.10(8) *Other energy conservation strategies.* Rescinded IAB 11/12/03, effective 12/17/03.

20.10(9) *Pilot projects.* Rescinded IAB 11/12/03, effective 12/17/03.

199—20.11(476) Customer notification of peaks in electric energy demand. Each electric utility shall inform its customers of the significance of reductions in consumption of electricity during hours of peak demand.

20.11(1) Annual notice. Each electric utility shall provide its customers, on an annual basis, with a written notice explaining how growth in demand affects a utility's investment costs and why reduction of customer usage during periods of peak demand may help delay or reduce the amount of future rate increases. The notice shall be delivered to its customers between May 1 and June 15 of each year if peak demand is likely to occur during the months of June through September. If peak demand usually occurs during the months of October through February, the notice shall be delivered to its customers between August 1 and September 15.

20.11(2) Notification plan. Each investor-owned utility shall have on file with the board a plan to notify its customers of an approaching peak demand on the day when peak demand is likely to occur.

a. The plan shall include the following:

(1) A provision for a general notice to be given customers prior to the time when peak demand is likely to occur as prescribed in 20.11(2)“*b*” and an explanation of when and how notice of an approaching peak in electric demand will be given to customers.

(2) A provision for direct notice to be given customers whose load reduction will have a significant impact on the utility’s peak. The utility shall provide for such notice to be given prior to the time when peak demand is likely to occur, as prescribed in 20.11(2)“*b*,” and shall explain the criteria used to identify customers to whom notice will be given and when and how notice will be given.

(3) A statement showing the total costs, with each component thereof itemized, projected to be associated with implementing the plan. Notice should be provided in the most efficient manner available. The board may reject a plan which includes excessive costs or which specifies an ineffective method of customer notification and may direct development of a new plan.

(4) The text of the general and direct message to be given in the general notice to customers. The message shall, at a minimum, include the name of the utility or utilities providing the notice, an explanation that conditions exist which indicate a peak in demand is approaching, and a statement that reduction in usage of electricity during the period of peak demand will ease the burden placed on the utility’s system by growth in peak demand and may help delay or reduce the amount of future rate increases.

(5) A designation of the U.S. weather station(s), situated within the utility’s service territory, whose temperature readings and predictions will be used by the utility in applying the standard in 20.11(2)“*b*.”

(6) A provision for joint delivery, by two or more utilities, of the general notice to customers in regions of the state where U.S. weather station(s) predict conditions specified in 20.11(2)“*b*” will exist on the same day.

b. For purposes of this rule, peak demand is likely to occur on a nonholiday weekday between June 15 and September 15 when the following conditions exist:

(1) The utility’s designated weather station predicts the temperature will rise above 95° Fahrenheit (35° Celsius), and the designated weather station officially recorded a temperature above 95° Fahrenheit (35° Celsius) on the previous day, or

(2) The utility’s designated weather station predicts the temperature will rise to above 90° Fahrenheit (33° Celsius) on a day following at least two consecutive days of temperatures above 95° Fahrenheit (35° Celsius), as officially recorded by the designated weather station, but

(3) If a utility can demonstrate it would have been required to provide between June 15 and September 15 a peak alert notice to customers, because of the existence of the conditions set forth in 20.11(2)“*b*”(1) or 20.11(2)“*b*”(2), on more than six days in any one of the preceding ten years, the utility may substitute a 97° Fahrenheit (36° Celsius) standard in lieu of the 95° Fahrenheit (35° Celsius) standard in the subrule.

20.11(3) Implementation of notification plan. The utility shall implement the approved plan on each day of the year when peak demand is likely to occur, as prescribed by 20.11(2)“*b*.”

20.11(4) Permissive notices. The standard for implementing peak alert notification in subrule 20.11(2) is a minimum standard and does not prohibit a utility or association of utilities from issuing a notice requesting customers to reduce usage at any other time.

20.11(5) Annual report. Each electric utility required by subrule 20.11(2) to file a plan for customer notification shall file, on or before April 1 of each year, a report stating the number of notices given its customers, the dates when notices were issued, the annual cost of providing both general and direct notice to customers and measures of kilowatt hour demand at the time when notice was given and at hourly intervals thereafter until kilowatt hour demand decreases to the level at which it was measured when the notice was issued. The annual report shall also include a statement of any problems experienced by the utility in providing customer notification of a peak demand and a proposal to modify the plan, if necessary, to make customer notification more effective. Modifications must be approved by the board before they are implemented.

199—20.12(476) New structure energy conservation standards. Rescinded IAB 11/12/03, effective 12/17/03.

199—20.13(476) Periodic electric energy supply and cost review [476.6(16)].

20.13(1) Procurement plan. The board shall periodically conduct a contested case proceeding for the purpose of evaluating the reasonableness and prudence of a rate-regulated public utility's electric fuel procurement and contracting practices. By January 31 each year the board will notify a rate-regulated utility if the utility will be required to file an electric fuel procurement plan. In the years in which it does not conduct a contested case proceeding, the board may require a utility to file certain information for the board's review. In years in which a full proceeding is conducted, a rate-regulated utility providing electric service in Iowa shall prepare and file with the board on or before May 15 of each required filing year a complete electric fuel procurement plan for an annual period commencing June 1 or, in the alternative, for the annual period used by the utility in preparing its own fuel procurement plan. A utility's procurement plan shall be organized to include information as follows:

a. Index. The plan shall include an index of all documents and information required to be filed in the plan, and the identification of the board files in which the documents incorporated by reference are located.

b. Purchase contracts and arrangements. A utility's procurement plan shall include detailed summaries of the following types of contracts and agreements executed since the last procurement review:

- (1) All contracts and fuel supply arrangements for obtaining fuel for use by any unit in generation;
- (2) All contracts and arrangements for transporting fuel from point of production to the site where placed in inventory, including any unit generating electricity for the utility;

- (3) All contracts and arrangements for purchasing or selling allowances;
- (4) Purchased power contracts or arrangements, including sale-of-capacity contracts, involving over 25 MW of capacity;
- (5) Pool interchange agreements;
- (6) Multiutility transmission line interchange agreements; and
- (7) Interchange agreements between investor-owned utilities, generation and transmission cooperatives, or both, not required to be filed above, which were entered into or in effect since the last filing, and all such contracts or arrangements which will be entered into or exercised by the utility during the prospective 12-month period.

All procurement plans filed by a utility shall include all of the types of contracts and arrangements listed in subparagraphs (1) and (2) of this paragraph which will be entered into or exercised by the utility during the prospective 12-month period. In addition, the utility shall file an updated list of contracts that are or will become subject to renegotiation, extension, or termination within five years. The utility shall also update any price adjustment affecting any of the filed contracts or arrangements.

c. Other contract offers. The procurement plan shall include a list and description of those types of contracts and arrangements listed in paragraph 20.13(1) "b" offered to the utility since the last filing into which the utility did not enter. In addition, the procurement plan shall include a list of those types of contracts and arrangements listed in paragraph 20.13(1) "b" which were offered to the utility for the prospective 12-month period and into which the utility did not enter.

d. Studies or investigation reports. The procurement plans shall include all studies or investigation reports which have been considered by the utility in deciding whether to enter into any of those types of contracts or arrangements listed in paragraphs 20.13(1) "b" and "c" which will be exercised or entered into during the prospective 12-month period.

e. Price hedge justification. The procurement plan shall justify purchasing allowance futures contracts as a hedge against future price changes in the market rather than for speculation.

f. Actual and projected costs. The procurement plan shall include an accounting of the actual costs incurred in the purchase and transportation of fuel and the purchase of allowances for use in generating electricity associated with each contract or arrangement filed in accordance with paragraph 20.13(1) "b" for the previous 12-month period.

The procurement plan also shall include an accounting of all costs projected to be incurred by the utility in the purchase and transportation of fuel and the purchase of allowances for use in generating electricity associated with each contract or arrangement filed in accordance with paragraph 20.13(1)“b” in the prospective 12-month period.

If applicable, the reporting of transportation costs in the procurement plan shall include all known liabilities, including all unit train costs.

g. Costs directly related to the purchase of fuel. The utility shall provide a list and description of all other costs directly related to the purchase of fuels for use in generating electricity not required to be reported by paragraph “f.”

h. Compliance plans. Each utility shall file its SO₂ compliance plan as submitted to the EPA. Revisions to the compliance plan shall be filed with each subsequent procurement plan.

i. Evidence submitted. Each utility shall submit all factual evidence and written argument in support of its evaluation of the reasonableness and prudence of the utility’s procurement practice decisions in the manner described in its procurement plan. The utility shall file data sufficient to forecast fuel consumption at each generating unit or power plant for the prospective 12-month period. The board may require the submission of machine-readable data for selected computer codes or models.

j. Additional information. Each utility shall file additional information as ordered by the board.

20.13(2) Periodic review proceeding. The board shall periodically conduct a proceeding to evaluate the reasonableness and prudence of a rate-regulated utility’s procurement practices. The prudence review of allowance transactions and accompanying compliance plans shall be determined on information available at the time the options or plans were developed.

a. On or before May 15 of a required filing year, each utility shall file prepared direct testimony and exhibits in support of its fuel procurement decisions and its fuel requirement forecast. This filing shall be in conjunction with the filing of the plans. The burden shall be on the utility to prove it is taking all reasonable actions to minimize its purchased fuel costs.

b. The board shall disallow any purchased fuel costs in excess of costs incurred under responsible and prudent policies and practices.

199—20.14(476) Flexible rates.

20.14(1) Purpose. This subrule is intended to allow electric utility companies to offer, at their option, incentive or discount rates to their customers.

20.14(2) General criteria.

a. Electric utility companies may offer discounts to individual customers, to selected groups of customers, or to an entire class of customers. However, discounted rates must be offered to all directly competing customers in the same service territory. Customers are direct competitors if they make the same end product (or offer the same service) for the same general group of customers. Customers that only produce component parts of the same end product are not directly competing customers.

b. In deciding whether to offer a specific discount, the utility shall evaluate the individual customer's, group's, or class's situation and perform a cost-benefit analysis before offering the discount.

c. Any discount offered should be such as to significantly affect the customer's or customers' decision to stay on the system or to increase consumption.

d. The consequences of offering the discount should be beneficial to all customers and to the utility. Other customers should not be at risk of loss as a result of these discounts; in addition, the offering of discounts shall in no way lead to subsidization of the discounted rates by other customers in the same or different classes.

20.14(3) *Tariff requirements.* If a company elects to offer flexible rates, the utility shall file for review and approval tariff sheets specifying the general conditions for offering discounted rates. The tariff sheets shall include, at a minimum, the following criteria:

a. The cost-benefit analysis must demonstrate that offering the discount will be more beneficial than not offering the discount.

b. The ceiling for all discounted rates shall be the approved rate on file for the customer's rate class.

c. The floor for the discount rate shall be equal the energy costs and customer costs of serving the specific customer.

d. No discount shall be offered for a period longer than five years, unless the board determines upon good cause shown that a longer period is warranted.

e. Discounts should not be offered if they will encourage deterioration in the load characteristics of the customer receiving the discount.

20.14(4) *Reporting requirements.* Each rate-regulated electric utility electing to offer flexible rates shall file annual reports with the board within 30 days of the end of each 12 months. Reports shall include the following information:

a. Section 1 of the report concerns discounts initiated in the last 12 months. For all discounts initiated in the last 12 months, the report shall include:

(1) The identity of the new customers (by account number, if necessary);

(2) The value of the discount offered;

(3) The cost-benefit analysis results;

(4) The end-use cost of alternate fuels or energy supplies available to the customer, if relevant;

(5) The energy and demand components by month of the amount of electricity sold to the customer in the preceding 12 months.

b. Section 2 of the report relates to overall program evaluation. Amount of electricity refers to both energy and demand components when the customer is billed for both elements. For all discounts currently being offered, the report shall include:

(1) The identity of each customer (by account number, if necessary);

(2) The amount of electricity sold in the last 12 months to each customer at discounted rates, by month;

(3) The amount of electricity sold to each customer in the same 12 months of the preceding year, by month;

(4) The dollar value of the discount in the last 12 months to each customer, by month; and

(5) The dollar value of sales to each customer for each of the previous 12 months.

c. Section 3 of the report concerns discounts denied or discounts terminated. For all customers specifically evaluated and denied or having a discount terminated in the last 12 months, the report shall include:

- (1) Customer identification (by account number, if necessary);
- (2) The amount of electricity sold in the last 12 months to each customer, by month;
- (3) The amount of electricity sold to each customer in the same 12 months of the preceding year, by month; and
- (4) The dollar value of sales to each customer for each of the past 12 months.

d. No monthly report is required if the utility had no customers receiving a discount during the relevant period and had no customers which were evaluated for the discount and rejected during the relevant period.

20.14(5) Rate case treatment. In a rate case, 50 percent of any identifiable increase in net revenues will be used to reduce rates for all customers; the remaining 50 percent of the identifiable increase in net revenues may be kept by the utility. If there is a decrease in revenues due to the discount, the utility's test year revenues will be adjusted to remove the effects of the discount by assuming that all sales were made at full tariffed rates for the customer class. Determining the actual amount will be a factual determination to be made in the rate case.

199—20.15(476) Customer contribution fund.

20.15(1) Applicability and purpose. This rule applies to each electric public utility, as defined in Iowa Code sections 476.1, 476.1A, and 476.1B. Each utility shall maintain a program plan to assist the utility's low-income customers with weatherization and to supplement assistance received under the federal low-income home energy assistance program for the payment of winter heating bills.

20.15(2) Program plan. Each utility shall have on file with the board a detailed description of its current program plan. At a minimum, the plan shall include the following information:

- a. A list of the members of the governing board, council, or committee established to determine the appropriate distribution of the funds collected. The list shall include the organization each member represents;
- b. A sample of the customer notification with a description of the method and frequency of its distribution;
- c. A sample of the authorization form provided to customers;
- d. The date of implementation.

Program plans for new customer contribution funds shall be rejected if not in compliance with this rule.

20.15(3) Notification. Each utility shall notify all customers of the fund at least twice a year. The method of notice which will ensure the most comprehensive notification to the utility's customers shall be employed. Upon commencement of service and at least once a year, the notice shall be mailed or personally delivered to all customers. The other required notice may be published in a local newspaper(s) of general circulation within the utility's service territory. A utility serving fewer than 6000 customers may publish their semiannual notices locally in a free newspaper, utility newsletter or shopper's guide instead of a newspaper. At a minimum the notice shall include:

- a. A description of the availability and the purpose of the fund;
- b. A customer authorization form. This form shall include a monthly billing option and any other methods of contribution.

20.15(4) *Methods of contribution.* The utility shall provide for contributions as monthly pledges, as well as one-time or periodic contributions. Each utility may allow persons or organizations to contribute matching funds.

20.15(5) *Annual report.* On or before September 30 of each year, each utility shall file with the board a report of all the customer contribution fund activity for the previous fiscal year beginning July 1 and ending June 30. The report shall be in a form provided by the board and shall contain an accounting of the total revenues collected and all distributions of the fund. The utility shall report all utility expenses directly related to the customer contribution fund.

20.15(6) *Binding effect.* A pledge by a customer or other party shall not be construed to be a binding contract between the utility and the pledgor. The pledge amount shall not be subject to delayed payment charges by the utility.

199—20.16(476) Exterior flood lighting. Rescinded IAB 11/12/03, effective 12/17/03.

199—20.17(476) Ratemaking treatment of emission allowances.

20.17(1) *Applicability and purpose.* This rule applies to all rate-regulated utilities providing electric service in Iowa. Under Title IV of the Clean Air Act Amendments of 1990, each electric utility is required to hold sufficient emission allowances to offset sulfur dioxide emissions at all affected and new units. The acquisition and disposition of emission allowances will be treated for ratemaking purposes as defined in this rule.

20.17(2) *Definitions.* The following words and terms, when used in this rule, shall have the meaning indicated below:

“*Auction allowances*” are allowances acquired or sold through EPA’s annual allowance auction.

“*Boot*” means something acquired or forfeited to equalize a trade.

“*Direct sale allowances*” are allowances purchased from the EPA in its annual direct sale.

“*Fair market value*” is the amount at which an allowance could reasonably be sold in a transaction between a willing buyer and a willing seller other than in a forced or liquidation sale.

“*Historical cost*” is the amount of cash or its equivalent paid to acquire an asset.

“*Original cost*” is the historical cost of an asset to the person first devoting the asset to public service.

“*Statutory allowances*” are allowances allocated by the EPA at no cost to affected units under the Acid Rain Program either through annual allocations as a matter of statutory right and those for which a utility may qualify by using certain compliance options or effective use of conservation and renewables.

20.17(3) Valuing allowances for ratemaking purposes.

- a. Statutory allowances. Valued at zero cost to electric utility.
- b. Direct sale allowances. Valued at historical cost.
- c. Auction allowances. Valued at historical cost.
- d. Purchased allowances. Valued at historical cost.

20.17(4) Valuing allowance inventory accounts. Allowance inventory accounts shall be valued at the weighted average cost of all allowances eligible for use during that year.

20.17(5) Valuing allowances acquired as part of a package. Allowances acquired as part of a package with equipment, fuel, or electricity shall be valued at their fair market value at the time the allowances were acquired.

20.17(6) Valuing allowances acquired through exchanges.

a. *Exchanges without boot.* Electric utilities shall value allowances received in exchanges based on the recorded inventory value of the allowances relinquished.

b. *Exchanges with boot.* Electric utilities shall value allowances as the sum of the inventory cost of the allowances given up and the monetary consideration paid in boot for the newly acquired allowances. In determining the historical cost of allowances received, a gain (or loss) shall be recorded to the extent that the amount of boot received exceeds a proportionate share of the recorded weighted average inventory cost of the allowance surrendered. The proportionate share shall be based upon the ratio of the monetary consideration received (i.e., boot) to the total consideration received (monetary consideration plus the fair market value of the allowances received). The historical cost of the allowances received shall be equal to the amount derived by subtracting the difference between the boot received and the gain from the old inventory cost.

20.17(7) Valuing allowances transferred among affiliates.

a. Allowances transferred from a utility to a parent or unregulated subsidiary. Allowances shall be transferred at the higher of historical cost or fair market value.

b. Allowances transferred from an unregulated subsidiary or parent to a utility. Allowances shall be transferred at the lesser of original cost or fair market value.

c. Allowances transferred from a utility to an affiliated utility. Allowances shall be transferred at fair market value.

20.17(8) Expense recognition and recovery of allowance costs.

a. *Expense recognition.* Electric utilities shall charge allowances (including fractional amounts) to expense in the month in which related sulfur dioxide emissions occur.

b. *Expense recovery.* The expense associated with allowances used for compliance shall be passed through the energy adjustment as specified in rule 20.9(476).

c. *Allowance inventory shortage.* If a utility emits more sulfur dioxide in a month than it has allowances in inventory, the utility shall pass the estimated cost of acquiring the needed allowances through the energy adjustment. When the needed allowances are acquired, any difference between the estimated and actual cost of the allowances shall be passed through the energy adjustment as specified in rule 20.9(476).

20.17(9) Gains/losses from allowance transactions. The gains and losses from allowance transactions shall be passed through the energy adjustment as specified in rule 20.9(476).

20.17(10) Allowance futures contracts.

a. *Price hedging.* Electric utilities shall defer the costs or benefits from hedging transactions and include such amounts in inventory values when the related allowances are acquired, sold or otherwise disposed of. Where the costs or benefits of hedging transactions are not identifiable with specific allowances, the amounts shall be included in inventory values when the futures contract is closed.

b. Speculation. Allowance transactions entered into for the purpose of speculation shall not affect allowance inventory pricing.

20.17(11) Working capital reserve of allowances. A working capital reserve of allowances shall be established in each utility's rate case proceeding based on the probability of forced outages, fuel quality variability, variability in load growth, nuclear exposure, the price and availability of allowances on the national market, and any other factors that the board deems appropriate. The working capital reserve will earn at the utility's authorized rate of return.

20.17(12) Allowances banked for future use. Allowances banked for future use shall be considered plant held for future use in utility rate proceedings if a definitive plan and schedule for use of the allowances is deemed adequate by the board.

20.17(13) Prudence of allowance transactions. The prudence of allowance transactions shall be determined by the board in the periodic electric energy supply and cost review. The prudency review of allowance transactions and accompanying compliance plans shall be based on information available at the time the options or plans were developed. Costs recovered from ratepayers through the energy adjustment that are deemed imprudent by the board shall be refunded with interest to ratepayers through the energy adjustment as specified in rule 20.9(476).

199—20.18(476,478) Service reliability requirements for electric utilities.

20.18(1) Applicability. Rule 20.18(476,478) is applicable to investor-owned electric utilities and electric cooperative corporations and associations operating within the state of Iowa subject to Iowa Code chapter 476 and to the construction, operation, and maintenance of electric transmission lines by electric utilities as defined in subrule 20.18(4) to the extent provided in Iowa Code chapter 478.

20.18(2) Purpose and scope. Reliable electric service is of high importance to the health, safety, and welfare of the citizens of Iowa. The purpose of rule 20.18(476,478) is to establish requirements for assessing the reliability of the transmission and distribution systems and facilities that are under the board's jurisdiction. This rule establishes reporting requirements to provide consumers, the board, and electric utilities with methodology for monitoring reliability and ensuring quality of electric service within an electric utility's operating area. This rule provides definitions and requirements for maintenance of interruption data, retention of records, and report filing.

20.18(3) General obligations.

a. Each electric utility shall make reasonable efforts to avoid and prevent interruptions of service. However, when interruptions occur, service shall be reestablished within the shortest time practicable, consistent with safety.

b. The electric utility's electrical transmission and distribution facilities shall be designed, constructed, maintained, and electrically reinforced and supplemented as required to reliably perform the power delivery burden placed upon them in the storm and traffic hazard environment in which they are located.

c. Each electric utility shall carry on an effective preventive maintenance program and shall be capable of emergency repair work on a scale which its storm and traffic damage record indicates as appropriate to its scope of operations and to the physical condition of its transmission and distribution facilities.

d. In appraising the reliability of the electric utility's transmission and distribution system, the board will consider the condition of the physical property and the size, training, supervision, availability, equipment, and mobility of the maintenance forces, all as demonstrated in actual cases of storm and traffic damage to the facilities.

e. Each electric utility shall keep records of interruptions of service on its primary distribution system and shall make an analysis of the records for the purpose of determining steps to be taken to prevent recurrence of such interruptions.

f. Each electric utility shall make reasonable efforts to reduce the risk of future interruptions by taking into account the age, condition, design, and performance of transmission and distribution facilities and providing adequate investment in the maintenance, repair, replacement, and upgrade of facilities and equipment.

g. Any electric utility unable to comply with applicable provisions of rule 20.18(476,478) may file a waiver request pursuant to rule 199—1.3(17A,474,476,78GA,HF2206).

20.18(4) Definitions. Terms and formulas when used in rule 20.18(476,478) are defined as follows:

“*Customer*” means (1) any person, firm, association, or corporation, (2) any agency of the federal, state, or local government, or (3) any legal entity responsible by law for payment of the electric service from the electric utility which has a separately metered electrical service point for which a bill is rendered. Electrical service point means the point of connection between the electric utility’s equipment and the customer’s equipment. Each meter equals one customer. Retail customers are end-use customers who purchase and ultimately consume electricity.

“*Customer average interruption duration index (CAIDI)*” means the average interruption duration for those customers who experience interruptions during the year. It is calculated by dividing the annual sum of all customer interruption durations by the total number of customer interruptions.

$$\text{CAIDI} = \frac{\text{Sum of All Customer Interruption Durations}}{\text{Total Number of Customer Interruptions}}$$

“*Distribution system*” means that part of the electric system owned or operated by an electric utility and designed to operate at a nominal voltage of 25,000 volts or less.

“*Electric utility*” means investor-owned electric utilities and electric cooperative corporations and associations owning, controlling, operating, or using transmission and distribution facilities and equipment subject to the board’s jurisdiction.

“*GIS*” means a geospatial information system. This is an information management framework that allows the integration of various data and geospatial information.

“*Interrupting device*” means a device capable of being reclosed whose purpose is to interrupt faults and restore service or disconnect loads. These devices can be manual, automatic, or motor-operated. Examples may include transmission breakers, feeder breakers, line reclosers, motor-operated switches, fuses, or other devices.

“*Interruption*” means a loss of service to one or more customers or other facilities and is the result of one or more component outages. The types of interruption include momentary event, sustained, and scheduled. The following interruption causes shall not be included in the calculation of the reliability indices:

1. Interruptions intentionally initiated pursuant to the provisions of an interruptible service tariff or contract and affecting only those customers taking electric service under such tariff or contract;
2. Interruptions due to nonpayment of a bill;
3. Interruptions due to tampering with service equipment;
4. Interruptions due to denied access to service equipment located on the affected customer’s private property;
5. Interruptions due to hazardous conditions located on the affected customer’s private property;
6. Interruptions due to a request by the affected customer;
7. Interruptions due to a request by a law enforcement agency, fire department, other governmental agency responsible for public welfare, or any agency or authority responsible for bulk power system security;

8. Interruptions caused by the failure of a customer's equipment; the operation of a customer's equipment in a manner inconsistent with law, an approved tariff, rule, regulation, or an agreement between the customer and the electric utility; or the failure of a customer to take a required action that would have avoided the interruption, such as failing to notify the company of an increase in load when required to do so by a tariff or contract.

"Interruption duration" as used herein in regard to sustained outages means a period of time measured in one-minute increments that starts when an electric utility is notified or becomes aware of an interruption and ends when an electric utility restores electric service. Durations of less than five minutes shall not be reported in sustained outages.

"Interruption, momentary" means single operation of an interrupting device that results in a voltage of zero. For example, two breaker or recloser operations equals two momentary interruptions. A momentary interruption is one in which power is restored automatically.

"Interruption, momentary event" means an interruption of electric service to one or more customers of duration limited to the period required to restore service by an interrupting device. Note: Such switching operations must be completed in a specified time not to exceed five minutes. This definition includes all reclosing operations that occur within five minutes of the first interruption. For example, if a recloser or breaker operates two, three, or four times and then holds, the event shall be considered one momentary event interruption.

"Interruption, scheduled" means an interruption of electric power that results when a transmission or distribution component is deliberately taken out of service at a selected time, usually for the purposes of construction, preventive maintenance, or repair. If it is possible to defer the interruption, the interruption is considered a scheduled interruption.

"Interruption, sustained" means any interruption not classified as a momentary event interruption. It is an interruption of electric service that is not automatically or instantaneously restored, with duration of greater than five minutes.

"Loss of service" means the loss of electrical power, a complete loss of voltage, to one or more customers. This does not include any of the power quality issues such as sags, swells, impulses, or harmonics. Also see definition of "interruption."

"Major event" will be declared whenever extensive physical damage to transmission and distribution facilities has occurred within an electric utility's operating area due to unusually severe and abnormal weather or event and:

1. Wind speed exceeds 90 mph for the affected area, or
2. One-half inch of ice is present and wind speed exceeds 40 mph for the affected area, or
3. Ten percent of the affected area total customer count is incurring a loss of service for a length of time to exceed five hours, or
4. 20,000 customers in a metropolitan area are incurring a loss of service for a length of time to exceed five hours.

"Meter" means, unless otherwise qualified, a device that measures and registers the integral of an electrical quantity with respect to time.

"Metropolitan area" means any community, or group of contiguous communities, with a population of 20,000 individuals or more.

"Momentary average interruption frequency index (MAIFI)" means the average number of momentary electric service interruptions for each customer during the year. It is calculated by dividing the total number of customer momentary interruptions by the total number of customers served.

$$\text{MAIFI} = \frac{\text{Total Number of Customer Momentary Interruptions}}{\text{Total Number of Customers Served}}$$

“*OMS*” is a computerized outage management system.

“*Operating area*” means a geographical area defined by the electric utility that is a distinct area for administration, operation, or data collection with respect to the facilities serving, or the service provided within, the geographical area.

“*Outage*” means the state of a component when it is not available to perform its intended function due to some event directly associated with that component. An outage may or may not cause an interruption of service to customers, depending on system configuration.

“*Power quality*” means the characteristics of electric power received by the customer, with the exception of sustained interruptions and momentary event interruptions. Characteristics of electric power that detract from its quality include waveform irregularities and voltage variations, either prolonged or transient. Power quality problems shall include, but are not limited to, disturbances such as high or low voltage, voltage spikes and transients, flickers and voltage sags, surges and short-time overvoltages, as well as harmonics and noise.

“*Rural circuit*” means a circuit not defined as an urban circuit.

“*System average interruption duration index (SAIDI)*” means the average interruption duration per customer served during the year. It is calculated by dividing the sum of the customer interruption durations by the total number of customers served during the year.

$$\text{SAIDI} = \frac{\text{Sum of All Customer Interruption Durations}}{\text{Total Number of Customers Served}}$$

“*System average interruption frequency index (SAIFI)*” means the average number of interruptions per customer during the year. It is calculated by dividing the total annual number of customer interruptions by the total number of customers served during the year.

$$\text{SAIFI} = \frac{\text{Total Number of Customer Interruptions}}{\text{Total Number of Customers Served}}$$

“*Total number of customers served*” means the total number of customers served on the last day of the reporting period.

“*Urban circuit*” means a circuit where both 75 percent or more of its customers and 75 percent or more of its primary circuit miles are located within a metropolitan area.

20.18(5) Record-keeping requirements.

**a. Required records for electric utilities with over 50,000 Iowa retail customers.*

(1) Each electric utility shall maintain a geospatial information system (GIS) and an outage management system (OMS) sufficient to determine a history of sustained electric service interruptions experienced by each customer. The OMS shall have the ability to access data for each customer in order to determine a history of electric service interruptions. Data shall be sortable by each of, and in any combination with, the following factors:

1. State jurisdiction;
 2. Operating area (if any);
 3. Substation;
 4. Circuit;
 5. Number of interruptions in reporting period; and
 6. Number of hours of interruptions in reporting period.
- (2) Records on interruptions shall be sufficient to determine the following:
1. Starting date and time the utility became aware of the interruption;
 2. Duration of the interruption;
 3. Date and time service was restored;
 4. Number of customers affected;

5. Description of the cause of the interruption;
 6. Operating areas affected;
 7. Circuit number(s) of the distribution circuit(s) affected;
 8. Service account number or other unique identifier of each customer affected;
 9. Address of each affected customer location;
 10. Weather conditions at time of interruption;
 11. System component(s) involved (e.g., transmission line, substation, overhead primary main, underground primary main, transformer); and
 12. Whether the interruption was planned or unplanned.
- (3) Each electric utility shall maintain as much information as feasible on momentary interruptions.

(4) Each electric utility shall keep information on cause codes, weather codes, isolating device codes, and equipment failed codes.

1. The minimum interruption cause code set should include: animals, lightning, major event, scheduled, trees, overload, error, supply, equipment, other, unknown, and earthquake.

2. The minimum interruption weather code set should include: wind, lightning, heat, ice/snow, rain, clear day, and tornado/hurricane.

3. The minimum interruption isolating device set should include: breaker, recloser, fuse, sectionalizer, switch, and elbow.

4. The minimum interruption equipment failed code set should include: cable, transformer, conductor, splice, lightning arrester, switches, cross arm, pole, insulator, connector, other, and unknown.

5. Utilities may augment the code sets listed above to enhance tracking.

(5) An electric utility shall retain for seven years the records required by 20.18(5)“a”(1) through (4).

(6) Each electric utility shall record the date of installation of major facilities (poles, conductors, cable, and transformers) installed on or after April 1, 2003, and integrate that data into its GIS database.

b. Required records for all other electric utilities.

(1) Each electric utility, other than those providing only wholesale electric service, shall record and maintain sufficient records and reports that will enable it to calculate for the most recent seven-year period the average annual hours of interruption per customer due to causes in each of the following four major categories: power supplier, major storm, scheduled, and all other. Those electric utilities that provide only wholesale electric service shall provide their wholesale customers with the information necessary to allow those customers to ascertain the cause of power supply-related outages.

The category “scheduled” refers to interruptions resulting when a distribution transformer, line, or owned substation is deliberately taken out of service at a selected time for maintenance or other reasons.

The interruptions resulting from either scheduled or unscheduled outages on lines or substations owned by the power supplier are to be accounted for in the “power supplier” category.

The category “major storm” represents service interruptions from conditions that cause many concurrent outages because of snow, ice, or wind loads that exceed design assumptions for the lines.

The “all other” category includes outages primarily resulting from emergency conditions due to equipment breakdown, malfunction, or human error.

(2) When recording interruptions, each electric utility, other than those providing only wholesale electric service, shall use detailed standard codes for interruption analysis recommended by the United States Department of Agriculture, Rural Utilities Service (RUS) Bulletin 161-1, Tables 1 and 2, including the major cause categories of equipment or installation, age or deterioration, weather, birds or animals, member (or public), and unknown. The utility shall also include the subcategories recommended by RUS for each of these major cause categories.

(3) Each electric utility, other than those providing only wholesale electric service, shall also maintain and record data sufficient to enable it to compute systemwide calculated indices for SAIFI-, SAIDI-, and CAIDI-type measurements, once with the data associated with “major storms” and once without.

c. Each electric utility shall make its records of customer interruptions available to the board as needed.

20.18(6) Notification requirements and other reporting.

a. *Notification.* Each electric utility with over 50,000 Iowa retail customers shall notify the board of any major event as defined in subrule 20.18(4) and of any other widespread outage considered significant by the electric utility. The notice shall be provided as soon as practical once the occurrence of a major event becomes known to the electric utility. Notice shall be made by telephone to the board’s customer services section, by electronic mail to the board’s general E-mail address, or by facsimile. The notice shall include, to the electric utility’s best knowledge at the time:

- (1) The nature or cause of the major event;
- (2) The area affected by the major event;
- (3) The number of customers that have experienced a sustained interruption of service; and
- (4) The estimated time until service is restored.

The electric utility shall provide periodic updates to the board as new or improved information becomes available until all service is restored. The electric utility shall periodically report to the general public (via broadcasts or other media and by updating telephone answering machines) its best estimate as to when the service will be restored.

b. *Major event report.* Each electric utility with over 50,000 Iowa retail customers shall submit a report to the board within 20 business days after the end of a major event. The report shall include the following:

- (1) A description of the event;
- (2) The total number of customers out of service over the course of the major event at six-hour intervals, identified by operating area or circuit area;
- (3) The longest customer interruption;
- (4) The damage cost estimates to the electric utility’s facilities;
- (5) The date and time when storm center opened and closed;
- (6) The number of people used to restore service; and
- (7) The name and telephone number of a utility employee who may be contacted about the outage.

20.18(7) Annual reliability and service quality report for utilities with more than 50,000 Iowa retail customers. Each electric utility with over 50,000 Iowa retail customers shall submit to the board and consumer advocate on or before May 1 of each year an annual reliability report for the previous calendar year for the Iowa jurisdiction. The report shall include the following information:

a. *Description of service area.* Urban and rural Iowa service territory customer count, Iowa operating area customer count, if applicable, and major communities served within each operating area.

b. *System reliability performance.*

(1) An overall assessment of the reliability performance, including the urban and rural SAIFI, SAIDI, and CAIDI reliability indices for the previous calendar year for the Iowa service territory and each defined Iowa operating area, if applicable. This assessment shall include outages at the substation, transmission, and generation levels of the system that directly result in sustained interruptions to customers on the distribution system. These indices shall be calculated twice, once with the data associated with major events and once without. This assessment should contain tabular and graphical presentations of the trend for each index as well as the trends of the major causes of interruptions.

(2) The urban and rural SAIFI, SAIDI, and CAIDI reliability average indices for the previous five calendar years for the Iowa service territory and each defined Iowa operating area, if applicable. The reliability average indices shall include outages at the substation, transmission, and generation levels of the system that directly result in sustained interruptions to customers on the distribution system. Calculation of the five-year average shall start with data from the year covered by the first Annual Reliability Report submittal so that by the fifth Annual Reliability Report submittal a complete five-year average shall be available. These indices shall be calculated twice, once with the data associated with major events and once without.

(3) The MAIFI reliability indices for the previous five calendar years for the Iowa service territory and each defined Iowa operating area for which momentary interruptions are tracked. The first annual report should specify which portions of the system are monitored for momentary interruptions, identify and describe the quality of data used, and update as needed in subsequent reports.

c. Reporting on customer outages.

(1) The reporting electric utility shall provide tables and graphical representations showing, in ascending order, the total number of customers that experienced set numbers of sustained interruptions during the year (i.e., the number of customers who experienced zero interruptions, the number of customers who experienced one interruption, two interruptions, three interruptions, and so on). The utility shall provide this for each of the following:

1. All Iowa customers, excluding major events.
2. All Iowa customers, including major events.

(2) The reporting electric utility shall provide tables and graphical representations showing, in ascending order, the total number of customers that experienced a set range of total annual sustained interruption duration during the year (i.e., the number of customers who experienced zero hours total duration, the number of customers who experienced greater than 0.0833 but less than 0.5 hour total duration, the number of customers who experienced greater than 0.5 but less than 1.0 hour total duration, and so on, reflecting half-hour increments of duration). The utility shall provide this for each of the following:

1. All Iowa customers, excluding major events.
2. All Iowa customers, including major events.

d. Major event summary. For each major event that occurred in the reporting period, the following information shall be provided:

- (1) A description of the area(s) impacted by each major event;
- (2) The total number of customers interrupted by each major event;
- (3) The total number of customer-minutes interrupted by each major event; and
- (4) Updated damage cost estimates to the electric utility's facilities.

e. Information on transmission and distribution facilities.

(1) Total circuit miles of electric distribution line in service at year's end, segregated by voltage level. Reasonable groupings of lines with similar voltage levels, such as but not limited to 12,000- and 13,000-volt three-phase facilities, are acceptable.

(2) Total circuit miles of electric transmission line in service at year's end, segregated by voltage level.

f. Plans and status report.

(1) A plan for service quality improvements, including costs, for the electric utility's transmission and distribution facilities that will ensure quality, safe, and reliable delivery of energy to customers.

1. The plan shall cover not less than the three years following the year in which the annual report was filed. A copy of the electric utility's documents and databases supporting capital investment and maintenance budget amounts required in 20.18(7) "g"(1) and 20.18(7) "h"(1), respectively, (including but not limited to transmission and distribution facilities, transmission and distribution control and communication facilities, and transmission and distribution planning, maintenance, and reliability-related computer hardware and software) shall be maintained in the utility's principal Iowa business location and shall be available for inspection by the board and office of consumer advocate. The utility's plan may reference said budget documents and databases, instead of duplicating or restating the detail therein. Copies of capital budgeting documents shall be maintained for five years.

2. The plan shall identify reliability challenges and may describe specific projects and projected costs. The filing of the plan shall not be considered as evidence of the prudence of the utility's reliability expenditures.

3. The plan shall provide an estimate of the timing for achievement of the plan's goals.

(2) A progress report on plan implementation. The report shall include identification of significant changes to the prior plan and the reasons for the changes.

g. Capital expenditure information. Reporting of capital expenditure information shall start with data from the year covered by the first Annual Reliability Report submittal so that by the fifth Annual Reliability Report submittal five years of data shall be available in each subsequent annual report.

(1) Each electric utility shall report on an annual basis the total of:

1. Capital investment in the electric utility's Iowa-based transmission and distribution infrastructure approved by its board of directors or other appropriate authority. If any amounts approved by the board of directors are designated for use in a recovery from a major event, those amounts shall be identified in addition to the total.

2. Capital investment expenditures in the electric utility's Iowa-based transmission and distribution infrastructure. If any expenditures were utilized in a recovery from a major event, those amounts shall be identified in addition to the total.

(2) Each electric utility shall report the same capital expenditure data from the past five years in the same fashion as in 20.18(7) "g"(1).

h. Maintenance. Reporting of maintenance information shall start with data from the year covered by the first Annual Reliability Report submittal so that by the fifth Annual Reliability Report submittal five years of data shall be available in each subsequent annual report.

(1) Total maintenance budgets and expenditures for distribution, and for transmission, for each operating area, if applicable, and for the electric utility's entire Iowa system for the past five years. If any maintenance budgets and expenditures are designated for use in a recovery from a major event, or were used in a recovery from a major event, respectively, those amounts shall be identified in addition to the totals.

(2) Tree trimming.

1. The budget and expenditures described in 20.18(7) "h"(1) shall be stated in such a way that the total annual tree trimming budget expenditures shall be identifiable for each operating area and for the electric utility's entire Iowa system for the past five years.

2. Total annual projected and actual miles of transmission line and of distribution line for which trees were trimmed for the reporting year for each operating area and for the electric utility's entire Iowa system for the reporting year, compared to the past five years. If the utility has utilized, or would prefer to utilize, an alternative method or methods of tracking physical tree trimming progress, it may propose the use of that method or methods to the board in a request for waiver.

3. In the event the utility's actual tree trimming performance, based on how the utility tracks its tree trimming as described in 20.18(7) "h"(2)"1," lags behind its planned trimming schedule by more than six months, the utility shall be required to file for the board's approval additional tree trimming status reports on a quarterly basis. Such reports shall describe the steps the utility will take to remediate its tree trimming performance and backlog. The additional quarterly reports shall continue until the utility's backlog has been reduced to zero.

20.18(8) Annual report for all electric utilities not reporting pursuant to 20.18(7).

a. By July 1, 2003, each electric utility shall adopt and have approved by its board of directors or other governing authority a reliability plan and shall file an informational copy of the plan with the board. The plan shall be updated not less than annually and shall describe the following:

- (1) The utility's current reliability programs, including:
 1. Tree trimming cycle, including descriptions and explanations of any changes to schedules and procedures reportable in accordance with 199 IAC 25.3(3) "c";
 2. Animal contact reduction programs, if applicable;
 3. Lightning outage mitigation programs, if applicable; and
 4. Other programs the electric utility may identify as reliability-related.
- (2) Current ability to track and monitor interruptions.
- (3) How the electric utility plans to communicate its plan with customers/consumer owners.

b. By April 1, 2004, and each April 1 thereafter, each electric utility shall prepare for its board of directors or other governing authority a reliability report. A copy of the annual report shall be filed with the board for informational purposes, shall be made publicly available in its entirety to customers/consumer owners, and shall report on at least the following:

(1) Measures of reliability for each of the five previous calendar years, including reliability indices if required in 20.18(5) "b"(3). These measures shall start with data from the year covered by the first Annual Reliability Report so that by the fifth Annual Reliability Report submittal reliability measures will be based upon five years of data.

(2) Progress on any reliability programs identified in its plan, but not less than the applicable programs listed in 20.18(8) "a"(1).

20.18(9) Inquiries about electric service reliability.

a. For electric utilities with over 50,000 Iowa retail customers. A customer may request a report from an electric utility about the service reliability of the circuit supplying the customer's own meter. Within 20 working days of receipt of the request, the electric utility shall supply the report to the customer at a reasonable cost. The report should identify which interruptions (number and durations) are due to major events.

b. Other utilities are encouraged to adopt similar responses to the extent it is administratively feasible.

These rules are intended to implement Iowa Code sections 17A.3, 364.23, 474.5, 476.1, 476.2, 476.6, 476.8, 476.20, 476.54, 476.66, 478.18, and 546.7.

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