

# ARKANSAS PUBLIC SERVICE COMMISSION



## SPECIAL RULES - ELECTRIC

Approved 92-248-R: Order #7 issued on 6-16-94 (Effective 12-15-94)

Updated Docket 07-101-R: Order No. 3 issued on 9-26-07 (Effective 9-26-07)

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ADMINISTRATIVE HISTORY**

<u>Docket</u>	<u>Date</u>	<u>Order No.</u>	<u>Subject Matter of Docket/Order</u>
107	11-24-36	--	Adoption of <u>Special Rules - Electricity</u>
U-1104	3-8-56	--	General Revision of these Rules
82-290-R	6-15-83	3	Separation of <u>Special Rules – Electricity</u> from Rules and Regulations Governing Utility Service. Substantive changes proposed by Order No. 1 adopted with some revisions.
92-248-R	6-16-94	7	General revision of these Rules. Also renamed <u>Special Rules - Electric</u> .
07-101-R	9-26-07	3	Added Section 8 to these Rules

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## **DEFINITIONS**

### **Active Power**

The time average of the values of the instantaneous power, the average being taken over one period.

### **Apparent Power**

The product of the effective values of the current and the voltage.

### **Applicant**

Any person or entity requesting utility service, except as excluded by the Exception in the Commission's General Service Rules, Section 3.01.B.

### **Basic Reference Standard**

Those standards with which the values of the electrical units are maintained in the laboratory. Those standards also serve as the starting point of the chain of sequential measurements carried out in the laboratory.

### **Business Office**

A utility office where an individual may arrange for service connection, make or arrange payments on his bill, and ask questions regarding service or the status of his account.

### **Burden**

The impedance of the circuit connected to the secondary winding of an instrument transformer.

### **Calibration**

The making of adjustments necessary to bring operating characteristics into substantial agreement with standardized scales or markings.

### **Commission**

The Arkansas Public Service Commission.

**Customer**

Any person or entity who has applied for and agreed to pay for utility service.

**Demand**

The average value of power over a specified interval of time.

**Demand Register**

A mechanism, for use with an accumulating electricity meter, that indicates maximum demand and also registers electric energy.

**Display**

To have an item conspicuously available for public inspection in the public reception area of each utility business office.

**Emergency**

An unexpected serious occurrence or situation that calls for immediate action.

**Instrument Transformers**

A transformer that reproduces in its secondary circuit, in a definite and known proportion, the voltage or current of its primary circuit, with the phase relation substantially preserved

**Interruption of Service**

Temporarily stopping service for maintenance, testing, repair or safety.

**Laboratory Secondary Standards**

Standards that are used in the routine calibration tasks of the laboratory.

**Outage**

An unplanned temporary loss of utility service caused by a malfunction of or damage to utility facilities.

**Portable Standard Watt-Hour Meter**

A portable watt-hour meter principally used as a standard for testing other watt-hour meters.

**Power Factor**

The ratio of active power (kw) to apparent power (kVA).

**Public Utility or Utility**

A jurisdictional utility as defined by Ark. Code Ann. § 23-1-101.

**Standardizing Laboratory**

A laboratory responsible for maintaining basic reference standards and assigning values to the working standards used for the testing of electricity meters and auxiliary devices.

**Tariff**

A rate schedule, service regulation, or other document required to be filed as a tariff by the Commission's Rules of Practice and Procedure and approved by the Commission or by operation of law.

**Test Amperes - Test Current (TA)**

The current specified by the manufacturer for the main adjustment of the meter (heavy- or full-load adjustment). It has been identified as a "TA" on revenue meters manufactured since 1960. The main adjustment of a meter used with a current transformer may be made either at the test current or at the rated secondary current of the transformer.

**Transport Standards**

Standards of the same nominal value as the basic reference standards of a laboratory (and preferably of equal quality), which are regularly inter-compared with the basic group but are reserved for periodic inter-laboratory comparison tests to check the stability of the basic reference group.

**Trouble Report**

Any verbal or written report given to a utility concerning an operational problem with facilities or equipment. Billing complaints shall not be considered as trouble reports for the purpose of this definition.

**Utility service**

Service provided by a public utility and subject to regulation by the Commission.

## **SECTION 1. APPLICABILITY AND SCOPE**

### **Rule 1.01. Applicability**

These Rules shall apply to every electric utility whose activities bring it under the jurisdiction of the Commission.

### **Rule 1.02. Purpose and Scope**

- A. These Rules set forth standards for service by each electric utility. These Rules are intended to ensure adequate service, prevent discrimination and unfair practices, and protect both the consumers and utilities from unreasonable demands.
- B. Any electric utility service regulation, policy, procedure, rule, or service application, except those approved in special contracts by this Commission, that conflicts with these Rules is void and unlawful, unless the electric utility files a formal application for an exemption and the Commission approves it. These Rules are not intended to, and do not, affect or replace any Commission-approved service regulation, policy, procedure, rule, or service application of any electric utility which addresses items other than those covered in these Rules.
- C. Unless the context otherwise requires, wherever the masculine gender is used in these Rules, it shall include the feminine gender.
- D. Unless the context otherwise requires, wherever the singular form of a word is used in these Rules, it shall include the plural form, and wherever the plural form is used, it shall include the singular.

### **Rule 1.03. Exemption from Rules**

Amendments or exemptions to the Commission's Rules may be granted by the Commission in conformity with the Commission's Rules of Practice and Procedure, or as otherwise, provided within these Rules.

### **Rule 1.04. Duties Under the Law**

These Rules shall in no way relieve any person or entity of any duty under the laws of the State of Arkansas or the United States of America.

**Rule 1.05. Availability of Rules**

**A. Utilities**

**(1) To Employees**

Electric utility employees who are responsible for the application and explanation of any of these Rules shall have ready access to those Rules which apply to their respective job responsibilities. Ready access to the Rules means that they are easily accessible to an electric utility employee in his work area at the utility's offices.

**(2) To the Members of the Public**

**a. Notice to Public**

Each electric utility business office shall post an 8 and 1/2 inch by 11 inch notice stating that these Rules are available for public use. The notice shall be in the following form and will be provided through the Commission's Consumer Services Office:

**NOTICE TO CUSTOMERS**

**The Arkansas Public Service Commission governs many areas of customer service for this utility. The Commission's Rules contain important information about rights and responsibilities for applicants and customers. Copies of the Commission's Rules and Commission-approved Company tariffs and service regulations are on display in this office and are available for public inspection. A copy of any pertinent part of these Rules, tariffs, or service regulations is available to applicants and customers upon request.**

**b. Availability of Rules**

These Rules and any approved additions, revisions, or exemptions to these Rules shall be on display in each electric utility business office and be available for inspection. Each electric utility shall provide a copy of any pertinent part of these Rules to an applicant or customer upon request.

**B. Arkansas Public Service Commission**

These Rules shall be on display and available for inspection in the Office of the Secretary of the Commission. A copy of the Rules will be provided to any member of the public upon request.

## **SECTION 2. RECORDS AND REPORTS**

### **Rule 2.01. Location of Records**

Each electric utility shall maintain records within the state of Arkansas, at the offices of the electric utility, or at locations outside the State of Arkansas authorized by the Commission. Such records shall be available at all reasonable hours for examination by the Commission, its representatives, or others authorized by the Commission.

### **Rule 2.02. Retention of Records**

Records required by these Rules and orders of the Commission shall be maintained for at least the period of time designated in the most current Federal Energy Regulatory Commission (FERC) rules and regulations governing the preservation of records for electric utilities or as specifically provided for in these Rules or orders of the Commission, whichever period of time is longer. In any event, such records shall be maintained for at least 2 years.

### **Rule 2.03. Test and Inspection Records**

Each electric utility shall make a complete record of every test or inspection made to comply with these Rules. The record shall include the time, date, place, tester, inspector, and the results. Each electric utility shall maintain test and inspection records for at least 2 years, or as specified in these Rules.

### **Rule 2.04. Construction Records and Plans**

Each electric utility shall maintain copies of all construction reports and plans for a period of at least 2 years after the completion of a project. The records shall include, but not be limited to, design specifications, contracts, work orders, material placed, and associated costs.

### **Rule 2.05. Trouble Report Records**

Each electric utility shall maintain accurate records of trouble reports. Each record shall be maintained for at least 2 years. At a minimum, each record shall include:

- (1) Appropriate identification of the person(s) reporting the trouble and the specific geographic area;
- (2) Time and date of the initial report;
- (3) Description of the trouble reported;

- (4) Description of the trouble found by the electric utility;
- (5) Action taken to clear the trouble; and
- (6) Date and time the trouble was cleared.

#### **Rule 2.06. Service Outage Records**

Each electric utility shall maintain records of all detected or documented service outages. Each record shall include the date, time, location, cause, extent, and duration of the outage. Each electric utility shall maintain the records for at least 2 years.

#### **Rule 2.07. Maps and Associated Records**

##### **A. System Maps**

Each electric utility shall maintain current system schematic drawings and maps depicting plant in all service areas served by the electric utility. Those maps or plans shall be in sufficient detail to enable prompt location of each line and facility owned or operated by the electric utility. Each system map and its associated records shall be maintained in sufficient detail to enable the reconstruction of the system, if required.

##### **B. Changes to Maps**

Each electric utility shall map or add each change, relocation, or extension of plant to existing system maps no later than 24 calendar months after the change, relocation, or extension is completed. Until such changes are posted to the system maps, either sufficiently detailed engineering drawings showing the changes or a reference to the location of the drawings shall be attached to the existing maps.

#### **Rule 2.08. Records of Meters and Meter Tests**

Each electric utility shall maintain a meter record for each meter. Each record shall include the information set out in Subsections A., B., & C. below.

##### **A. General Information**

Each meter record shall contain the name of the manufacturer, type, size, serial and/or company number, and the date purchased, if known.

## **B. Meter Tests**

Each meter record shall contain the following information regarding meter tests:

- (1) All information necessary to identify the meter;
- (2) The date of the test;
- (3) The reason for making the test;
- (4) Meter reading upon removal from service;
- (5) All test data used in performing the test;
- (6) The results of the test, any repairs made as a result of the test, and the accuracy percentages of the meter after the test and repairs; and,
- (7) The complete history of the last 2 tests including the date of the tests, any type of repairs made, and the accuracy percentages of the meter after the testing and repairs.

## **C. Customer and Meter Location**

Each meter record shall identify the customer and the location of each numbered meter. A record of the date a meter is removed from customer service for testing, repair, or service discontinuation and a record of the last customer and location shall be maintained until the meter is placed back into service or retired.

### **Rule 2.09. Records of Kilowatt (Kw) and Kilowatt Hour (Kwh) Purchases and Sales**

Each electric utility shall maintain sufficiently detailed records to show the units of kilowatts and kilowatt hours of electricity purchased and sold.

### **Rule 2.10. Substation Records**

Each electric utility shall maintain records of substation operations. The electric utility shall maintain these records at least 2 years.

### **Rule 2.11. Voltage Surveys and Records**

- A. All voltage survey records derived from load analysis performed on distribution or transmission facilities shall be maintained for a period of 3

years.

- B. All voltage recording records associated with substation, distribution, or transmission equipment operations shall be maintained for a period of 2 years.

**Rule 2.12. Permit Records**

The electric utility shall maintain copies of all permits required and issued by the applicable regulatory or jurisdictional agencies. The copies of the permits shall be maintained at the appropriate office of the utility for inspection by the Commission.

**Rule 2.13. Reports to the Commission**

The Commission may require any information in any form from a utility which it has a right to obtain. (Ark. Code Ann. § 23-2-309.)

## **SECTION 3. OPERATIONS**

### **Rule 3.01. Service Connections**

#### **A. Acceptance of Applications**

When an electric utility receives an application for service within its allocated service territory, the utility shall neither refuse to accept the application for service nor request the applicant to withdraw the application.

#### **B. Service Connection Requirements**

All extensions of service shall be made in accordance with the utility's approved extension of facilities tariffs. An applicant for service must meet all requirements of the Commission's General Service Rules in order to qualify to receive service.

#### **(1) Where Distribution Facilities are Available**

##### **a. Service Connection Deadlines**

All reasonable efforts shall be made to serve qualified applicants within 5 working days after a temporary or permanent meter loop has been properly installed and the applicant has notified the utility that he is ready to receive electric service.

##### **b. Quality of Service Evaluations**

For purposes of evaluating the quality of service, 95% or more of all qualified applications must be served within the time frame specified above.

##### **c. Expected Service Dates**

Each electric utility shall notify the applicant of the expected service date. If an electric utility will not be able to connect service on the expected service date, it shall promptly notify the applicant of the new expected service connection date.

#### **(2) Where Distribution Facilities are Not Available**

##### **a. Initial Information**

Within 5 working days after receipt of a qualified application for service, an electric utility shall:

- (i) inform or mail notice to the applicant that facilities are not readily available; and,
- (ii) inform the applicant that within 10 working days the utility will provide the applicant an expected service date.

**b. Written Proposal**

Within 30 working days of the receipt of a qualified application, the electric utility shall provide a written proposal to the applicant for service which shall provide:

- (i) an explanation of any conditions and circumstances the applicant must meet before service will be provided; and,
- (ii) a description of the facilities to be constructed; and,
- (iii) if there will be a cost to the applicant, an estimate of his costs.

**EXCEPTION:**

When an engineering study is required, the utility shall provide a written proposal to the applicant for service within 60 working days of the receipt of the application, or provide a notice that the company must file for a Commission certificate.

**c. Changing the Expected Service Date**

If the electric utility will not be able to connect service on the expected service date, it shall promptly notify the applicant of the new expected service connection date.

**Rule 3.02. Extension of Facilities**

- A. Each electric utility shall make reasonable extensions of its facilities as provided in the electric utility's Commission-approved Extension of Facilities tariff. Each electric utility shall file its Extension of Facilities policy as a tariff according to the Commission's Rules of Practice and Procedure. (Also see Rule 3.03. of the Commission's General Service Rules.)
- B. When a customer pays for an extension of service and later moves from

that service location, the electric utility shall attempt to leave those facilities in place for use by other customers. If the electric utility removes the facilities, an applicant requesting the same extension of service at the premises shall obtain the extension cost-free.

**Rule 3.03. Ability to Receive Customer Trouble Reports**

Each electric utility shall provide equipment or personnel to receive customer trouble reports on a continuous 24 hour basis.

**Rule 3.04. Emergency Repair Service**

Each electric utility shall provide emergency repair service on a continuous 24 hour basis.

**Rule 3.05. Station Instruments and Meters**

Each electric utility shall install instruments and meters to obtain a daily record of the load and a monthly record of the output of its electric generating plant. Each electric utility purchasing electrical energy shall install instruments and meters to record all information regarding monthly purchases, unless the electric utility supplying the energy has already installed instruments from which the information can be obtained.

**Rule 3.06. Customer Meters**

**A. Installation, Operation, and Maintenance**

Each electric utility shall provide, own, install, operate, and maintain at its expense equipment necessary for regulating and measuring service delivered to customers. A utility may charge a Commission-approved fee for additional meters used as special meters or provided for the customer's convenience.

The amount of the approved fee shall be set forth in the utility's tariffed schedule of fees and charges.

**B. Meter Location**

A meter shall not be more than 6 feet nor less than 4 feet above the final standing surface, measured from the center of the meter cover. There shall be a minimum of 3 feet of unobstructed space in front of a meter, measured from the surface on which the meter is mounted.

**(1) Outdoor Meters**

Meters installed outdoors shall be placed in locations not subject to severe vibration and shall be readily accessible to authorized company representatives for meter reading, testing, and maintenance.

Meters shall not be placed in locations where they are subject to accidental damage or where they will cause inconvenience either to the customer or to the company's representative.

**(2) Indoor Meters**

Meters installed indoors shall not be placed in locations subject to severe vibration or excessive dampness and shall be readily accessible to authorized company representatives for meter reading, testing, and maintenance.

Meters shall not be installed in a location which may endanger the safety of those working on the meter or in any place that will cause unreasonable inconvenience either to the customer or the meter reader. Meters shall not be installed near belts or moving machinery which could endanger the safety of those working on them. Meters shall be installed at least eighteen inches from the conductors of other circuits carrying in excess of 100 amperes, unless the circuit metered or the neighboring circuit is in conduit, in which case no limitation shall be imposed.

**C. Meter Relocation**

- (1) An electric utility may, at its option and expense, relocate meters. Meters relocated at the option of the company shall be for just cause. An electric utility shall coordinate and cooperate with the customer in relocating the meter
- (2) The customer shall provide and have installed at his expense all wiring and equipment necessary for relocating the meter when relocation is:
  - (a) requested by a customer;
  - (b) required because of customer-initiated alterations; or,
  - (c) necessary to prevent a recurrence of discovered tampering or damage caused by the customer.

**Rule 3.07. Interstate Transmission of Electricity**

Each electric utility that transmits energy either into or out of the State shall accurately meter and record the interchange of energy.

## **SECTION 4. MAINTENANCE**

### **Rule 4.01. Restoration of Service**

#### **A. General Requirements**

- (1) If a customer experiences a service outage that does not result in an emergency, the electric utility shall make every reasonable effort to restore service not later than 24 hours after the outage is reported.
- (2) If corrective action is required of the customer before service can be restored, the 24 hour time limit will begin as soon as the electric utility is notified by the customer that the corrective action has been completed.
- (3) If service cannot be restored within 24 hours, the electric utility shall make reasonable efforts to notify the affected customers and give a time when service should be restored.

#### **B. Emergency Requirements**

When the electric utility becomes aware of an outage that results in an emergency, the electric utility shall begin immediate restoration of service and shall continue restoration until service is restored, unless 4.01.A.(2) applies.

### **Rule 4.02. Inspection and Repair of Plant Facilities**

#### **A. Inspection**

Each electric utility shall adopt a program of maintenance and inspection of its electric plant in order to determine the necessity for replacement and repair. The frequency of the various inspections shall be based on the utility's experience and accepted good practice. Each electric utility shall be able to provide evidence of compliance with its maintenance and inspection program.

#### **B. Remedying Defects**

- (1) Electric utility lines and equipment with defects which would endanger life or property shall be immediately repaired, replaced, disconnected, or isolated.
- (2) Deficiencies found during an inspection which do not require immediate correction shall be scheduled for maintenance. A

periodic report of corrective activity shall be kept with or refer to the appropriate inspection report.

**C. Permanently Abandoned Facilities**

When electric utility lines or equipment are permanently abandoned, the electric utility shall remove them or maintain them in a safe condition.

**Rule 4.03. Tree Trimming**

- A. While trimming trees as part of the utility's maintenance program, the electric utility shall consider the health of the plant involved, the goodwill of property owners, and the safety of the personnel to the extent practical.
- B. Trees which may interfere with electric conductors shall be trimmed or removed. Factors to be considered in determining the extent of tree trimming required include:
  - (1) Normal tree growth;
  - (2) The combined movement of trees and conductors under adverse weather conditions;
  - (3) Voltage;
  - (4) Sagging of conductors at elevated temperatures; and,
  - (5) Economic trimming cycles.
- C. Where the utility determines trimming or removal is not practical, the conductor shall be separated from the tree with suitable materials or devices to avoid conductor damage by abrasion and grounding of the circuit through the tree.

**Rule 4.04. Service and Adjustment of Control- Equipment**

**A. Service and Maintenance**

Each electric utility shall service and maintain electric utility equipment installed on customers' premises and shall adjust thermostats, clocks, relays, time switches, or photo-sensitive devices in order to provide service in accordance with approved tariffs.

## **B. Adjustment**

### **(1) Time Switches**

The time switches installed by an electric utility for controlling equipment, such as street lights, shall be of such quality that the timing mechanism may be adjusted to operate within 10 minutes per month of the accurate time. Time switches shall be inspected for proper operation at least quarterly and adjusted when found to be operating improperly or when service interruptions or outages cause an error of 1/2 hour or more.

### **(2) Control Devices**

Control devices installed by the electric utility to restrict the operation of appliances during on-peak hours shall be inspected for proper operation at regular intervals. Control devices shall be adjusted when found to be operating improperly, when service interruptions or outages result in an error of 2 hours or more, or when they fail to control the appliance during on-peak periods.

## **SECTION 5. CONSTRUCTION STANDARDS**

### **Rule 5.01. Construction Standards**

For new construction of electric utility plant, the current issues of the American National Standard Institute's National Electrical Safety Code (NESC) published by the Institute of Electrical and Electronics Engineers, Inc., and/or the National Electrical Code (NEC) published by the National Fire Protection Association, are designated as the standards.

Construction completed prior to the effective dates of current standards shall be in accordance with the standards in effect at the time of construction.

### **Rule 5.02 Facility Identification**

- A. Electric utility outside plant facilities and equipment shall be marked or numbered in accordance with the current issues of the NESC to identify the owner and the location; e.g. Sections 217A3, 220D, and 220E in the 1993 NESC. The date the facilities or equipment were first placed into service shall be recorded on appropriate records.
- B. When 2 or more utilities jointly own a structure, each utility shall have a distinguishing mark on the structure.
- C. On a continuous distribution or transmission line, marks and numbers shall be affixed to structures at regular intervals. Marks and numbers are not required to be affixed more frequently than to every tenth structure.

## SECTION 6. QUALITY STANDARDS

### Rule 6.01. Voltage and Frequency Standards

#### A. Standard Nominal Voltage

Each electric utility shall adopt standard nominal voltage(s), as may be required by its distribution system for its entire constant voltage service, or for each of the several districts into which the systems may be divided.

- (1) The nominal voltage to be supplied to a customer shall be specifically stated in the customer's service agreement and the electric utility's tariffs.
- (2) The voltage supplied to a customer shall not vary more than  $\pm 5$  percent from the adopted nominal voltage measured at the meter.

#### B. Voltage Variations

Voltage variations in excess of those specified in Rule 6.01.A.(2) shall not be considered a violation if variations are caused by:

- (1) The operation of power equipment on a customer's premises;
- (2) The action of the elements; or,
- (3) Infrequent and unavoidable fluctuations of short duration in station operation.

#### C. Voltage Recording Requirement

- (1) Each electric utility shall have available 1 or more portable recording voltmeters for the purpose of evaluating customer service. These instruments shall be of a type and capacity suited to the voltage supplied.
- (2) Each electric utility shall make continual voltage recordings at each distribution substation in order to verify voltage standards.
  - a. Each electric utility whose distribution substations do not have permanently installed recording voltmeters shall file a plan to provide facilities to comply with Rule 6.01.C.(2).
  - b. The plan shall be filed as a tariff within 1 year of the Commission's adoption of these Rules.

**D. Standard Frequency**

Each electric utility supplying alternating current shall adopt a standard frequency. The electric utility shall establish a standard frequency and maintain this frequency to within 5 percent below the standard at all times. Infrequent and unavoidable fluctuations of short duration due to system operations shall not be considered a violation of this Rule.

## **SECTION 7. TESTING**

### **Rule 7.01. Meter Test Standards**

The most current edition of the American National Standard Code for Electricity Metering (ANSI C12.1) published by the Institute of Electrical and Electronics Engineers, Inc. is designated as the standard for meter testing.

### **Rule 7.02. Standardizing Laboratory**

Each electric utility furnishing metered electric service shall establish and maintain, or arrange for the use of, a standardizing laboratory acceptable to the Commission. The Commission may inspect the facilities, instruments, and methods for accuracy at any time.

The standardizing laboratory shall have 1 ultra-stable electronic standard or at least 3 separate electro-mechanical standards that can be readily compared.

### **Rule 7.03. Meter Testing Facilities and Equipment**

Each electric utility furnishing metered electric service shall provide for or have available a meter laboratory, standard meters, instruments, and other equipment and facilities necessary to make the tests required by these Rules. The equipment and facilities shall be acceptable to the Commission, shall be available at all reasonable times for inspection by any authorized representative of the Commission, and may be located outside the State of Arkansas. Each electric utility shall report the location of its standardizing laboratory or laboratories to the Commission in Docket No. 86-033-A.

### **Rule 7.04. Test Standards**

#### **A. Basic Reference Standards**

- (1) The basic reference standards shall be housed in a temperature controlled environment and energized continuously.
- (2) Each 12 months at least 1 basic reference standard (the one with the oldest calibration date) shall be calibrated by an independent standardizing laboratory so that its accuracy is referenced to the National Bureau of Standards. As an alternative, the basic reference standards shall be compared to a National Bureau of Standards transport standard each 12 months.
- (3) Each month the basic reference standards shall be compared and the results recorded.

## **B. Laboratory Secondary Standards**

For testing the accuracy of portable standard watt-hour meters and other portable instruments used for testing service meters, each electric utility shall provide for and have available secondary standards as reference or check standards. Secondary standards may include any or all of the following: electrical instruments; watt-hour meters; and watt-meters. Service-type watt-hour meters used as secondary standards shall be permanently mounted in the meter laboratory of the electric utility and be used for no other purpose than for checking working watt-hour standards. Secondary standards shall be compared to a basic reference standard and adjusted, if necessary, each 12 months by a Commission-approved standardizing laboratory.

## **C. Portable Standard Watt-hour Meters**

- (1) All portable electro-mechanical standard watt-hour meters shall be compared with secondary standards at least once a month. All portable electronic standard watt-hour meters shall be compared with secondary standards at least every 6 months. If the comparison shows any portable standard watt-hour meter to be more than  $\pm 5$  percent in error at any load at which the portable standard will be used, the portable standard watt-hour meter shall be tested, adjusted, and certified in the laboratory of the electric utility or in some other independent laboratory. A certificate or calibration card which shows the date the meter was last certified and adjusted and which is signed by the proper authority must be kept with each portable standard watt-hour meter at all times. Records of certification and calibration shall be kept on file with the electric utility for a period of at least 1 year.
- (2) Portable standard watt-hour meters that are infrequently used shall be certified or calibrated prior to use.

## **D. Portable Testing Instruments**

- (1) All portable electrical testing instruments, such as voltmeters, ammeters, and watt-meters, shall be checked and calibrated in accordance with procedures and intervals recommended by the instrument manufacturer. All instruments used for such purposes shall have a manufacturer stated instrument error no greater than 1 percent of full scale value and no appreciable error at zero reading.
- (2) Portable equipment that is infrequently used shall be compared with a standard before using.

- (3) For portable equipment used to obtain routine or general operating information, the limits of accuracy as specified in Rule 7.04.D.(1) need not apply, but such instruments shall be within the range of accuracy necessary to obtain reliable data.

**Rule 7.05. Accuracy Requirements for Service Watt-Hour Meters, Demand Meters, and Pulse Recorders**

**A. Initial and Test Adjustments**

- (1) No watt-hour meter that has an incorrect register constant, test constant, gear ratio or dial train, or that registers upon no load ("creeps"), shall be placed in service or allowed to remain in service without adjustment and correction. An in-service meter "creeps" when, with potential applied to all stators and with all load wires disconnected, the moving element makes one complete rotation in 10 minutes or less.
- (2) No watt-hour meter that has an error in registration of more than the limits allowed in Rule 7.05.B.(1) shall be placed in service or be allowed to remain in service without adjustment. When meter error is found to exceed any one of the test limits in Rule 7.05.B.(1), it must be adjusted and a correction made to the customer's bill in accordance with the Commission's-General Service Rule 5.19.
- (3) Meters must be adjusted as closely as practicable to the condition of zero error but no greater than  $\pm 0.5$  percent.

**B. Acceptable Performance**

**(1) Watt-Hour Meter Accuracy**

The average error of the watt-hour meter shall not exceed  $\pm 2$  percent.

	<u>Test Current</u>	<u>Power Factor</u>	<u>Accuracy</u>
Heavy Load	100% Test Amperes	1.0	$\pm 2\%$
	100% Test Amperes	0.5	$\pm 2\%$
Light Load	10% Test Amperes	1.0	$\pm 2\%$

**(2) Demand Meter Accuracy**

The error of the demand register shall not exceed  $\pm 4$  percent of full scale value when tested between 25 percent and 100 percent of full scale value.

**(3) Pulse Recorders**

Pulse recorders shall not differ by more than  $\pm 2$  percent from the corresponding kilowatt hour meter registration. The timing error shall not exceed  $\pm 2$  minutes per day.

**(4) Time-of-Use Meters**

The timing element of time-of-use meters shall not be in error with central standard/daylight savings time by more than  $\pm 15$  minutes.

**C. Average Error**

- (1) The average error of a service watt-hour meter shall be determined as follows:

$$WA = \frac{LL + 4HL}{5}$$

Where:

WA - weighted average error of a service watt-hour meter

LL = error at light load for 100 percent power factor

HL = error at heavy load for 100 percent power factor

- (2) The average error of the watt-hour portion of a demand meter shall be determined as follows:

$$WA = \frac{LL + 4HL + 2HHL}{7}$$

Where:

WA = weighted average error of the watt-hour portion of a demand meter

LL = error at light load for 100 percent power factor

HL = error at heavy load for 100 percent power factor

HHL = error at heavy load with 50 percent lagging power factor

## **Rule 7.06. As-Found Meter Tests**

Each electric utility shall test meters as required by these Rules before making any alteration or adjustment.

## **Rule 7.07 Location and Methods for Meter and Instrument Transformer Testing**

### **A. Location of Meter Test**

- (1) Periodic tests of watt-hour and demand meters may be conducted with the meter in place or the meter may be removed from service and tested, except as provided for in Paragraph A.(2).
- (2) A customer or Commission-requested test of a watt-hour meter shall be made with the meter installed in place on the customer's premises under normal operating conditions, except that a detachable meter may be mounted on a test device designed for insertion- into the meter mounting. If a meter test at the customer premises is beyond the technical capability of the electric utility, the meter may be removed for testing provided the meter is sealed in the presence of the customer or Commission representative in accordance with the Commission's General Service Rule 5.18.

### **B. Test Methods**

- (1) Watt-hour meters installed with instrument transformers or shunts may be tested independently of the instrument transformers, provided that the transformer ratios and phase angles have been determined and are taken into account in the adjustment of the meter. The transformer errors may be neglected in the adjustment of the meter if instrument transformers are used that conform to the 0.3 accuracy-class limits at standard burdens approximating the actual secondary burden.
- (2) When the meter or metering installations are inspected the instrument transformers associated with the installations shall receive close visual inspection for correct connections or evidence of impairment resulting from severe overloads, physical damage, or abnormal conditions. Tests of instrument transformers shall be performed at the same time and the results of the tests shall be recorded.
- (3) The current transformer shall be tested with a suitable variable-burden device to determine if the windings of the secondary circuit have developed an open circuit, short circuit, or unintentional ground.

- (4) The secondary voltage of the potential transformer shall be measured and compared to the primary voltage to reveal defects in the transformer or associated circuits.

**C. Accuracy of Tests**

If the accuracy of the instrument transformers is suspect then an accuracy test shall be made by an independent laboratory or the electric utility's testing facility. Unless the accuracy of the transformer ratios is questioned, manufacturer's ratings will be acceptable. The most recent rating shall be maintained by the electric utility.

**Rule 7.08. Meter Testing Programs and Filing Requirements**

**A. Meter Test Programs for New Meters**

Before installation, all new meters shall be inspected and tested in a meter shop or laboratory, either on a 100% basis or on a sampling basis acceptable to the Commission, and appropriate action shall be taken to assure that the meters conform to the requirements of Rule 7.05.B. ANSI C12.1-1982, § 8.1.5.

**B. Meter Test Programs for In-Service Meters**

Meters may be tested under any of the following test programs:

- (1) Periodic interval ANSI C12.1-1982, § 8.1.8.4 and § 8.2.3.1.
- (2) Variable interval ANSI C12.1-1982, § 8.1.8.5.
- (3) Statistical sampling ANSI C12.1-1982, § 8.1.8.6.

In each of these three categories all of the meters shall be tested under the same program.

**C. Test Method Filing Requirements**

A utility shall state in its tariffs on file with the Commission which sampling method is used by the utility for testing new meters and which sampling method described in Subsection B. of this Rule is used by the utility for testing in-service meters.

**D. Report to the Commission**

A report on the results of the previous calendar year sample test program

shall be sent to the Commission by March 30 to be filed in Docket No. 86-033-A. The report shall include meter type, number of meters in service, number of meters sample tested, and the test results. The report shall indicate the lots rejected and a complete summary of the meter retirement history for the previous 5 years and the proposed meter retirements.

## **SECTION 8. FEDERAL LITIGATION CONSULTING FEES**

### **Rule 8.01. Recovery of Costs for Commission Retained Consultants or Attorneys under Ark. Code Ann § 23-4-102**

- A. When the Commission retains contract attorneys or contract consultants pursuant to Ark. Code Ann. § 23-4-102(c), and the fees and expenses for the contract attorneys or contract consultants are recovered from the affected electric public utility which is owned by a public utility holding company as defined by section 1261 of the Energy Policy Act of 2005, Pub. L. No. 109-58, the affected utility may directly recover from ratepayers only the amounts directly recovered from the utility.
  
- B. The affected utility may recover the fees and expenses under the preceding rule pursuant to the provisions of Ark. Code Ann. § 23-4-102(c), and the specific procedures, terms and conditions of this recovery must be set forth in a Litigation Consulting Fee Rider, or other recovery mechanism, filed with the Commission and approved pursuant to the Commission's Rules of Practice and Procedure.