

Retired Electric Utility Rate Book

The entire rate book entitled Northern States Power (Xcel Energy) Electric Company – MPSC No. 1, with approved rate schedules, rules, regulations, and standard forms, was retired April 9, 2008, in compliance with the Commission's Order in Case No. U-15152 issued on October 9, 2007.

ORIGINAL COPY

NORTHERN STATES POWER
COMPANY

MPSC #1

VOLUME NUMBER 1

OF THE

NORTHERN STATES POWER COMPANY

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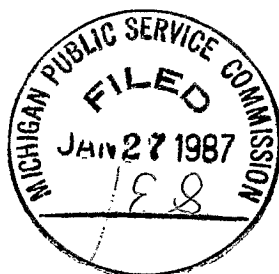
MICHIGAN PUBLIC SERVICE COMMISSION

COVERING THE SALE OF ELECTRICITY

IN PORTIONS OF

GOGEBIC AND ONTONAGON COUNTIES,

MICHIGAN



ELECTRIC SERVICE

NORTHERN STATES POWER COMPANY
d/b/a XCEL ENERGY

RATES, RULES & REGULATIONS

FOR

ELECTRIC SERVICE

EFFECTIVE

IN PORTIONS OF

GOGEBIC COUNTY

Bessemer, City
Ironwood, City
Wakefield, City

Bessemer, Township
Erwin, Township
Ironwood, Township
Marenisco, Township
Wakefield, Township

ONTONAGON COUNTY

Bergland, Township
Matchwood, Township

IN THE STATE OF

MICHIGAN

Issued June 5, 2001 by

J. L. Larsen
President
Eau Claire, Wisconsin



Effective: May 15, 2001

Issued Under Authority of The
Michigan Public Service Commission
dated May 15, 2001
in Case No. U-12872

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BY: J. L. LARSEN
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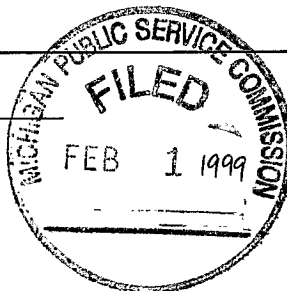


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Issued February 8, 2008 by

Effective for service rendered on and
After October 10, 2007

M.L. Swenson
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Issued Under Authority of the
 Michigan Public Service Commission
 dated October 9, 2007
 in Case No. U-15152

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Issued February 8, 2008 by

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dated October 9, 2007
in Case No. U-15152

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Issued February 8, 2008 by

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Effective for service rendered on and
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Issued Under Authority of the
 Michigan Public Service Commission
 dated October 9, 2007
 in Case No. U-15152

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Issued February 8, 2008 by

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Issued Under Authority of the
 Michigan Public Service Commission
 dated October 9, 2007
 in Case No. U-15152

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Issued February 8, 2008 by

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Michigan Public Service Commission
dated October 9, 2007
in Case No. U-15152

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Issued February 8, 2008 by

Effective for service rendered on and
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Issued Under Authority of the
Michigan Public Service Commission
dated October 9, 2007
in Case No. U-15152

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5th Revised No. 164	1/7/2000	1st Revised No. 186	4/1/87
		1st Revised No. 187	1/1/92

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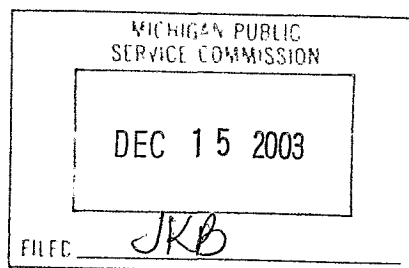
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Original No. 208	1/1/02		
Original No. 209	1/1/02		
Original No. 210	1/1/02		
Original No. 211	1/1/02		
Original No. 212	1/1/02		
1st Revised No. 213	6/02/03		

Issued December 1, 2003 by

Effective: as shown above

M. L. Swenson
President
Eau Claire, Wisconsin



NSP WISCONSIN

NORTHERN STATES POWER COMPANY
M. P. S. C. NO. 1 ELECTRIC - MICHIGAN

Original SHEET NO. 14

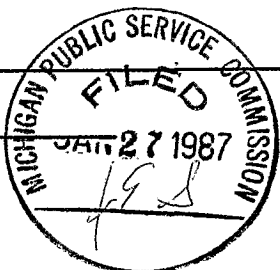
CANCELS SHEET NO. _____

DESCRIPTION OF TERRITORY SERVED

NORTHERN STATES POWER COMPANY
SERVES A PORTION OF
GOGEbic AND ONTONAGON COUNTIES
IN THE
UPPER PENINSULA OF MICHIGAN

ISSUED January 1, 1987

BY: E. M. THEISEN
PRESIDENT
EAU CLAIRE, WISCONSIN



EFFECTIVE FOR SERVICE RENDERED ON
AND AFTER January 1, 1987

ISSUED UNDER AUTHORITY OF THE MICHIGAN
PUBLIC SER. COMM. DATED November 4, 1986

IN CASE NO. U-8493

Cancels

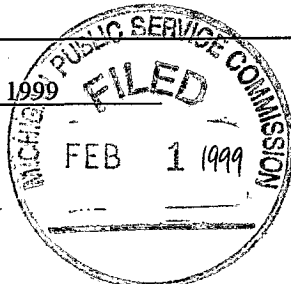
INDEX OF COMMUNITIES SERVED

Counties

Gogebic County		Ontonangon County	
Retail Service		Retail Service	
Bessemer	City	Bergland	Township
Ironwood	City	Matchwood	Township
Bessemer	Township		
Erwin	Township		
Ironwood	Township		
Marenisco	Township		
Wakefield	Township		
Wholesale Service			
Wakefield	City		

ISSUED January 19, 1999

BY: J. L. LARSEN
 PRESIDENT
 EAU CLAIRE, WISCONSIN



EFFECTIVE FOR SERVICE RENDERED ON
 AND AFTER January 7, 1999

ISSUED UNDER AUTHORITY OF THE MICHIGAN
 PUBLIC SER. COMM. DATED January 6, 1999
 IN CASE NO. U-11777

TECHNICAL TERMS, DEFINITIONS AND ABBREVIATIONS

Ampere A measure of electric current in an electrical circuit analogous to the flow of water in a water system.

British Thermal Unit, Btu The amount of heat required to raise the temperature of one pound of water one degree Fahrenheit. Heating value of fuels are usually expressed in terms of Btu per unit of weight or volume.

Community A specific location in which a group of customers exist without corporate identification.

Company In these Rules and Regulations, Northern States Power Company is referred to as the Company.

Customer The party in whose name service is purchased from Northern States Power Company.

Delivery Voltage The voltage at which the customer takes service and normally the voltage at the point of meeting of Customer and Company facilities.

Demand Expressed in kilowatts, the average rate of use of electric energy over a given period of time.

Fuel Cost Adjustment Factor The decrease or increase in the charge per kilowatthour when the cost of fuel for power generation is below or above the cost upon which the filed rates were established.

Hertz, Hz Unit of frequency of alternating current in cycles per second.

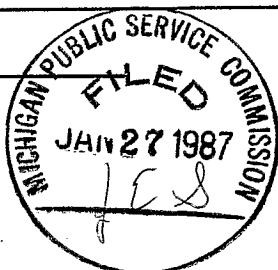
Horsepower, HP A measure of the rate at which energy is being consumed; one horsepower equals 746 watts or approximately 3/4 of a kilowatt.

Kilowatt, kW Represents the rate at which electric energy is being consumed at any particular moment (equals 1000 watts).

Kilowatthours, kWh The amount of electrical work output when energy consumed at the rate of one kilowatt is maintained for one hour (1 kWh = 3413 Btu).

ISSUED January 1, 1987

BY: E. M. THEISEN
PRESIDENT
EAU CLAIRE, WISCONSIN



EFFECTIVE FOR SERVICE RENDERED ON
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PUBLIC SER. COMM. DATED November 4, 1986

IN CASE NO. U-8493

TECHNICAL TERMS, DEFINITIONS AND ABBREVIATIONS

KVA Kilovoltampere; 1,000 voltamperes.

KVAR Kilovar; 1,000 reactive voltamperes.

KVARH Kilovarhour.

Load Factor, Lf The ratio of the kilowatthours consumed in a specific period of time to the product of the maximum kilowatts and the number of hours in that same period of time.

Municipality A city, village or town possessing corporate existence and governed by a duly constituted authority which is empowered to enter into contracts. In addition, a municipality is meant to include a group of people sponsored by and under the jurisdiction of a governmental agency which has the authority to enter into contracts and guarantees payment of bills under such contracts.

Power Factor, Pf The ratio of the actual power (watts) being consumed to the apparent power (volts X amperes), as indicated by meters. Unity power factor (100% power factor) indicates that there is no inefficiency of current being out of step with voltage.

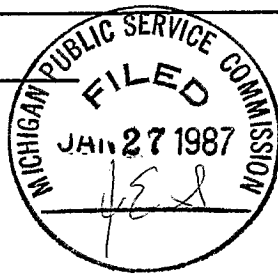
Premises The building or group of buildings to which service is rendered on a single contiguous property.

Primary Service Service furnished and metered at nominal primary distribution as available at the location.

Secondary Service Service furnished at a nominal voltage of 120 volts and electrical multiples thereof but not in excess of 480 volts.

Volt The meter-kilogram-second unit of electromotive force of potential difference, equal to the electromotive force or potential difference that will cause a current of 1 ampere to flow through a conductor with a resistance of 1 ohm.

ISSUED January 1, 1987



EFFECTIVE FOR SERVICE RENDERED ON AND AFTER January 1, 1987

BY: E. M. THEISEN
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EAU CLAIRE, WISCONSIN

ISSUED UNDER AUTHORITY OF THE MICHIGAN PUBLIC SER. COMM. DATED November 4, 1986

IN CASE NO. U-8493

NSP WISCONSIN

NORTHERN STATES POWER COMPANY

M. P. S. C. NO. 1 ELECTRIC -- MICHIGAN

1st Revised

Sheet No. 18

Cancels Original

Sheet No. 18

D

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PRESIDENT
EAU CLAIRE, WISCONSIN



EFFECTIVE FOR SERVICE RENDERED ON
AND AFTER January 7, 1999

ISSUED UNDER AUTHORITY OF THE MICHIGAN
PUBLIC SER. COMM. DATED January 6, 1999
IN CASE NO. U-11777

STANDARD RULES AND REGULATIONS

SECTION I - INTRODUCTION

1. General Information

These rules and regulations set forth the terms and conditions under which electric service will be provided by the Company. They shall apply to all classes of service and shall govern the terms of all contracts for such service, except that the Company reserves the right to enter into special contracts subject to the general regulations of the Michigan Public Service Commission. Failure of the Company to enforce any of the terms of these rules and regulations shall not be deemed as a waiver of the right to do so.

Any promises or agreements made by agents or employees of the Company which are not in conformance with these rules and regulations, nor with the terms of special contracts executed by authorized representatives of the Company, shall not have binding effect on the Company.

No ownership rights in any facilities provided by the Company shall pass to any person as a result of any contribution or deposit made under these rules. No deposits or contributions made by customers shall be refundable unless expressly so provided in these rules.

Copies of the Company's Rules and Regulations and Rate Schedules for electric service, as filed with the Michigan Public Service Commission, are open to public inspection at the Company's offices and are available upon request.

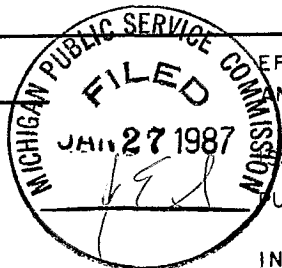
Whenever the application of these rules appears to be unfair to a customer, a prospective customer, or the Company, either party may apply to the Michigan Public Service Commission for a special ruling thereon.

Service provided under these rules and regulations is intended for use in permanent dwelling units, commercial, or industrial installations, except as specifically provided in Paragraph 10, Sheet Number 26. Unless otherwise stated in a contract, such service shall continue until a request is made by the customer or there is legal authority to terminate.

ISSUED January 1, 1987

EFFECTIVE FOR SERVICE RENDERED ON
AND AFTER January 1, 1987

BY: E. M. THEISEN
PRESIDENT
EAU CLAIRE, WISCONSIN.



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PUBLIC SER. COMM. DATED November 4, 1986

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STANDARD RULES AND REGULATIONS

SECTION II - TERMS AND CONDITIONS OF SERVICE

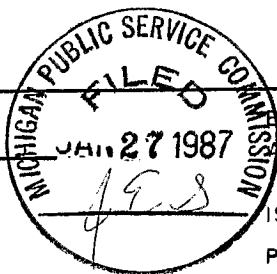
1. Application for Electric Service

Each applicant for electric service may be required to sign the Company's Application for Electric Service. Acceptance of service, with or without a signed application, shall be subject to compliance with the terms of the Standard Rules and Regulations and Rate Schedules as filed with the Commission.

2. Ownership and Responsibility

A. Company-Owned Facilities - The Company will normally install, own, operate and maintain all distribution facilities on the supply side of the point of attachment as shown on the Company's Standard Drawings, including metering equipment. All service entrance conductor wiring from a point of connection to the Company's service line at a location satisfactory to the Company shall be the responsibility of the customer. If building modifications hinder access to metering facilities, create a hazardous condition, or cause a violation of code, the customer will be responsible for all costs incurred by the Company to correct these conditions.

(1) Access to Premises - The customer shall provide, at no expense to the Company, suitable space with provisions for installation and maintenance of the Company's facilities on the customer's premises. Authorized agents of the Company shall have access to the premises at all reasonable times for construction, operation, maintenance, removal or inspection of the Company's facilities, or to inspect the customer's facilities or measure the customer's load. Authorized employees and agents shall carry identification furnished by the Company and shall display it upon request. Failure to provide access for any of the above reasons may result in termination of service.



ISSUED January 1, 1987

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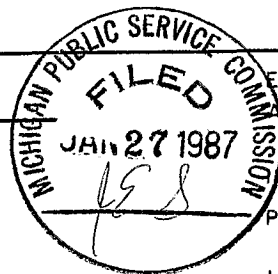
STANDARD RULES AND REGULATIONS

(2) Use of Facilities - The Company will not allow use of its poles or other facilities by others for installations or attachments of any kind without written authorization from the Company. This includes, but is not limited to, electrical or communication equipment, lights, signs and fences. The Company assumes no liability for property owned by others attached to its facilities. Unauthorized attachments to Company facilities may be removed by the Company.

(3) Protection - The customer shall use reasonable diligence to protect the Company's facilities located on the customer's premises, and to prevent tampering or interference with such facilities. The Company may discontinue service in accordance with any applicable rules of the Michigan Public Service Commission, in case the meter or wiring on the customer's premises has been tampered with or altered in any manner to allow unmetered or improperly metered energy to be used. In case of such unauthorized use of service, the Company will continue service only after the customer has agreed to pay for the unmetered energy used, cost of discovery, and make provisions and pay charges for an outdoor meter installation or other metering changes as may be required by the Company. Failure to enter into such an agreement or failure to comply with the terms of such an agreement shall be cause to discontinue service in accordance with any applicable rules of the Company or Commission. Restoration of service will be made upon receipt of reasonable assurance of the customer's compliance with the Company's approved Standard Rules and Regulations.

B. Customer-Owned Facilities - The Company reserves the right to deny or terminate service to any customer whose wiring or equipment shall constitute a hazard to the Company's equipment or its service to others. However, it disclaims any responsibility to inspect the customer's wiring, equipment or any subsequent wiring changes or modifications and shall not be held liable for any injury or damage or billing errors resulting from the condition thereof.

ISSUED January 1, 1987



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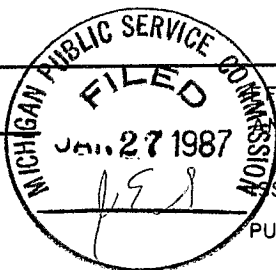
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STANDARD RULES AND REGULATIONS

- (1) The customer shall be responsible for inadequate performance of such facilities. Before purchasing equipment or installing wiring, it shall be the customer's responsibility to check with the Company as to the characteristics of the service available. Any changes required to bring customer's service into compliance with code will be paid for by customer. The Company reserves the right to make reasonable service charges for work performed by Company personnel resulting from malfunction of the customer's facilities.
- (2) The customer shall be responsible for notifying the Company of any additions to or changes in the customer's equipment which might exceed the capacity of the Company's facilities, or otherwise affect the quality of service. The customer shall also be responsible for the installation of auxiliary or standby equipment and of alarms and protective devices as required to provide reasonable protection in the event of disturbance or interruption of electrical service. The customer shall install and maintain the necessary devices to protect his equipment against service interruptions and other disturbances on the Company's system, as well as the necessary devices to protect the Company's facilities against overload caused by the customer's equipment. Characteristics and installation of all such equipment or devices shall meet the approval of the Company.

3. Use of Service

- A. Each customer shall, as soon as electric service becomes available, purchase from the Company practically all electric energy used on the premise, and shall become liable for all charges incurred in the purchase of said electrical energy from the Company. For customer billing under this provision, refer to paragraph 9, Sheet Number 59. Standby and/or supplemental on-site generation may be utilized only if approved by the Company and properly connected so as to prevent parallel operations with the Company's system.

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EAU CLAIRE, WISCONSIN.

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STANDARD RULES AND REGULATIONS**4. Notice of Intent**

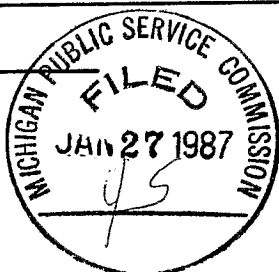
- A. Application - Prior to use of electric service, each customer shall make proper application to the Company, and shall furnish all reasonable information required by the Company. Failure to comply with this requirement may result in refusal by the Company to provide service.

Any customer using service without first notifying and enabling the Company to establish a beginning meter reading may be held responsible for any amounts due for service supplied to the premises from time of last reading reported immediately preceding his occupancy.

- B. Termination - Any customer desiring termination of service shall so notify the Company a minimum of five (5) working days in advance so the service may be discontinued on a mutually agreeable date. Customers failing to give proper notice of intent to vacate the premises may be held responsible for use of service until a meter reading acceptable to the Company is obtained.

5. Conditions of Use

- A. The customer shall not use the service in any way that causes a safety hazard, endangers the Company's facilities, or disturbs service to other customers. Failure to comply with this provision may result in discontinuance of the customer's service.
- B. Customer shall install only such motors or other apparatus or appliances as are suitable for operation with the character of the service supplied by Company, and electric energy must not be used in such a manner as to cause detrimental voltage fluctuations or disturbances in Company's distribution system.

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EAU CLAIRE, WISCONSINEFFECTIVE FOR SERVICE RENDERED ON
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STANDARD RULES AND REGULATIONS

6. Non-Standard Service

- A. Customers shall be liable for the cost of any special installation necessary to meet particular requirements for service at other than standard voltages, or for the supply of closer voltage regulation than required by standard practice.
- B. The usual supply of electric service shall be subject to the provision of Michigan Public Service Commission rules, but where special service-supply conditions or problems arise for which provision is not otherwise made, the Company may modify or adapt its supply terms to meet the peculiar requirements of such case.
- C. The Company reserves the right to make special contractual arrangements as to the provision of necessary service facilities, duration of contract, minimum bills or other service conditions, with respect to customers whose establishments are remote from the Company's existing suitable facilities, or whose service requirements exceed the capabilities of the Company system in the area, or otherwise necessitate unusual investments by the Company in service facilities, or where the permanence of the service is questionable.

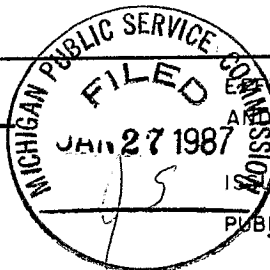
7. Resale of Electric Energy

Customers shall not resell to or share with others any electric service furnished by the Company under the terms of its filed rate schedules not applicable to such resale of energy, unless otherwise authorized by the Michigan Public Service Commission.

8. Service to Single Metering Points

- A. Where resale of electric service exists, the Company will be under no obligation to furnish or maintain meters or other facilities for the resale of service by the reselling customer to the ultimate user.

ISSUED January 1, 1987



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AFTER January 1, 1987

BY: E. M. THEISEN
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PUBLIC SER. COMM. DATED November 4, 1986

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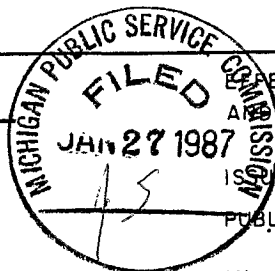
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STANDARD RULES AND REGULATIONS

- B. Electric service will no longer be granted where connection is made to a single metering point for the purpose of resale to the reselling customer's ultimate user. Each user will be metered as an individual unit. For the purpose of this rule, resale will also include sales where the electric service is included in the rent.

9. Point of Attachment

- A. Where suitable service is available, the Company will install service connections from its distribution lines to a suitable point of attachment on the customer's premises designated by the Company. Where the customer requests a point of attachment other than that specified by the Company and such alternative point of attachment is approved by the Company, the cost of installing additional intermediate supports, wires or fixtures necessary to reach the point of attachment requested by the customer, shall be borne by the customer.
- B. Should it become necessary for any cause beyond the Company's control to change the location of the point of attachment of service connections, the entire cost of any changes in the customer's wiring made necessary thereby shall be borne by the customer.
- C. A service connection will not be made unless the customer has installed his service entrance facilities in compliance with code requirements and specifications set forth by the Company.
- D. The customer may be required to provide at no expense to the Company space for Company facilities on the customer's premises.
- E. For overhead service, the location of the point of attachment must be such that the Company's service conductors can be installed without attachment to the building in any other locations.

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AFTER January 1, 1987BY: E. M. THEISEN
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EAU CLAIRE, WISCONSINISSUED UNDER AUTHORITY OF THE MICHIGAN
PUBLIC SER. COMM. DATED November 4, 1986IN CASE NO. U-8493

STANDARD RULES AND REGULATIONS

- F. For underground service the point of attachment may be on the building, meter pedestal, or other agreed upon point.
- G. Service will be provided to meter poles for farm service or other service where more than one structure is to be supplied from a single meter. The customer shall be required to install a fused disconnect switch on the pole at his own expense in accordance with Company specifications.

10. Service to House Trailers, Vans and Buses Used as Dwelling Units

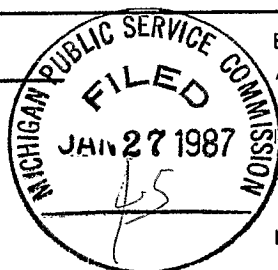
- A. The Company will make service connection to house trailers, vans, buses, or any other dwelling of a mobile nature without special charges, except as specified under the General Construction Policy, when the customer owns the premises and has installed an approved septic tank and a well for his own use.
- B. If the above conditions are not met, such installation and service facilities shall be considered to be Temporary Service as applicable under Paragraph 15, Sheet Number 66.

11. Nature and Quality of Service

- A. The Company will endeavor to, but does not guarantee to, furnish a continuous supply of electric energy and to maintain voltage and frequency within reasonable limits.
- B. The Company shall not be liable for interruptions in the service, phase failure or reversal, or variations in the service characteristics, or for any loss or damage of any kind or character occasioned thereby, due to causes or conditions beyond the Company's control, and such causes or conditions shall be deemed to specifically include but not be limited to the following: acts or omissions of customers or third parties; operation of safety devices, except when such operation is caused by the negligence of the Company; absence of an alternate supply of service; failure, malfunction, breakage, necessary repairs or inspection of machinery, facilities or equipment when the Company has carried on a program of maintenance consistent with the general practices prevailing in the industry; act of God; war; action of the elements; storm or flood; fire; riot; labor dispute or disturbances; or the exercise of authority or regulation by governmental or military authorities.

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AND AFTER January 1, 1987BY: E. M. THEISEN
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EAU CLAIRE, WISCONSIN

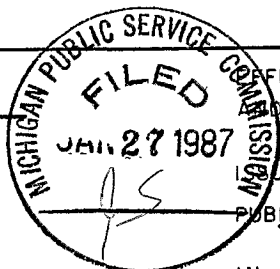
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PUBLIC SER. COMM. DATED November 4, 1986IN CASE NO. U-8493

STANDARD RULES AND REGULATIONS

- C. The customer shall be responsible for giving immediate notice to the Company of interruptions or variations in electric service, so that appropriate corrective action can be taken.
- D. The Company reserves the right to temporarily interrupt service for construction, repairs, emergency operations, shortages in power supply, safety, and state or national emergencies and shall be under no liability with respect to any such interruption, curtailment or suspension.

12. Metering and Metering Equipment

- A. The customer shall provide, free of expense to the Company and close to the point of service entrance, a space suitable to the Company for the installation of the necessary metering equipment. The customer shall permit only authorized agents of the Company or other persons lawfully authorized to do so, to inspect, test or remove the same. If the meters or metering equipment are damaged or destroyed through the neglect of the customer, the cost of necessary repairs or replacements shall be paid by the customer.
- B. The Company reserves the right to make final decision with respect to methods and equipment used in measurement of loads for billing purposes.
- (1) Meter Testing - All testing of metering equipment will be done by qualified personnel, either Company employees or by independent agents meeting the requirements of both the Company and the Commission. The Company may, at its option, either conduct field tests on the customer's premises or remove metering equipment for shop testing.
- (a) Routine Tests - The Company will, through test procedures established by the Commission, endeavor to maintain its metering equipment within the accuracy limits prescribed by the Commission.

ISSUED January 1, 1987EFFECTIVE FOR SERVICE RENDERED ON
AFTER January 1, 1987BY: E. M. THEISEN
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PUBLIC SER. COMM. DATED November 4, 1986

EAU CLAIRE, WISCONSIN

IN CASE NO. _____

U-8493

STANDARD RULES AND REGULATIONS

(b) Tests Requested by Customer - Tests of individual meters will be made upon request of the customer, with payment of a meter test fee in advance of test. The Company reserves the right to refuse to test any meter upon request more frequently than once in six (6) months. If such test reveals meter registration of more than 102% of that of the test equipment, the charge will be refunded and a billing adjustment made. If meter accuracy is found to be within the plus or minus two percent (2%) accuracy range, the charge will not be refunded and a billing adjustment will not be required. When it appears that there may be sufficient reason to question meter accuracy (for example, a marked increase in metered consumption without a corresponding change in a customer's living or working patterns, or in the number and kind of appliances or equipment in use on the customer's premises), the Company may waive the meter test charge or it may install a second meter, at no charge to the customer, to provide check readings.

(c) Failure to Register - When a meter has stopped or has failed to register all of the energy used, the Company will make a charge to the customer for the energy estimated to have been used.

(2) Location of Meters - Meters for all single-family residential service will be installed outdoors. Meters for other services may be installed outdoors if they are located so they are protected from traffic and are readily accessible for reading and testing. Meters which must be protected from inclement weather while being serviced or tested shall be located indoors or in a suitable housing where such work can be performed.

Meters located indoors shall be as near as possible to the service entrance, in a clean, dry place, reasonably secure from injury, not subject to vibration, and readily accessible for reading and testing.

ISSUED January 1, 1987



BY: E. M. THEISEN
PRESIDENT
EAU CLAIRE, WISCONSIN

EFFECTIVE FOR SERVICE RENDERED ON
AND AFTER January 1, 1987

ISSUED UNDER AUTHORITY OF THE MICHIGAN
PUBLIC SER. COMM. DATED November 4, 1986

IN CASE NO. U-8493

STANDARD RULES AND REGULATIONS

In cases of multiple buildings such as two-family flats or apartment buildings, if the meters are installed indoors they shall be located within the premises served or at a common location readily accessible to the tenants and the Company.

An authorized representative of the Company will determine the acceptability of the meter location in all cases.

13. Special Charges

The Company will make such charges for reasonable special services as necessary to discourage abuse and to minimize subsidy of such services by other customers. The following schedule shall apply where applicable:

Table with 2 columns: Description of charge and Amount. Includes 'Charge for any special services at customer's request' with sub-items for regular and outside working hours, 'Connection Charge - Processing Charge', 'Processing Charge (no meter installation or reading required)', 'Meter Reading Charge', and 'Meter Test Charge'.

Reconnect Charge - When a customer requests a disconnection and reconnection of service at the same location within any twelve-month period, the customer must pay a reconnection charge which is the higher of 1) the charges as stated below, or 2) the customer charge set forth in the applicable rate schedule times the number of months service was disconnected.

Table with 2 columns: Description of charge and Amount. Includes 'Reconnect Charge' sub-items for regular and outside working hours, 'Disconnect at pole during regular working hours', 'Disconnect at pole outside regular working hours', 'Collection Charge - Charge for disconnection in field', 'Bad Check Handling Charge', and 'Connections outside regular working hours'.

(Continued to Sheet No. 30)

Issued December 30, 1991

By: E.J. McINTYRE
PRESIDENT
EAU CLAIRE, WISCONSIN



EFFECTIVE FOR SERVICE RENDERED ON
AND AFTER January 1, 1992

ISSUED UNDER AUTHORITY OF THE MICHIGAN
P.S.C. DATED December 5, 1991
IN CASE NO. U-9880

STANDARD RULES AND REGULATIONS**14. Other Conditions of Service**

A. Service Disconnect - Service to the customer's premises may be disconnected by the Company under the following conditions:

(1) At Customer's Request

(a) Upon Termination - The Company will disconnect service with no charge to the customer upon due notice as provided for in A.(2)(a) below. However, if restoration of service at the same location is requested by the same customer or property owner(s), a reconnect charge will be applied. The reconnect charge will be increased by the amount of the minimum charge in the applicable rate schedule for the months service was disconnected, provided such reconnect is made during the twelve-(12) month period immediately following disconnect.

(b) For Repairs - The Company will temporarily disconnect service to facilitate repairs or other work on the customer's equipment or premises. Special service charges as set forth in paragraph 13, Sheet Number 29, will be applicable.

(2) At Company's Option - Commercial and Industrial
(Also see paragraph 11, Sheet Numbers 26 and 27)

(a) With Due Notice - The Company may disconnect service upon due notice for any of the following reasons:

(1a) For violaton of these rules and regulations.

(2a) For failure to fulfill contractual obligations.

(3a) For failure to provide reasonable access to the customer's premises.

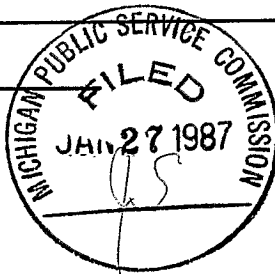
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PUBLIC SER. COMM. DATED November 4, 1986

EAU CLAIRE, WISCONSIN.

IN CASE NO. U-8493

STANDARD RULES AND REGULATIONS

- (4a) For failure to pay any bill within the established collection period.
- (5a) For failure to provide deposits as provided elsewhere in these rules.
- (6a) Upon written notice from governmental inspection authorities of condemnation of the customer's facilities or premises.
- (7a) For fraudulent representation as to the use of service.
- (b) Without Notice - The Company reserves the right to disconnect service without notice for any of the following reasons:
- (1b) Where hazardous conditions exist in the customer's facilities.
- (2b) Where the customer's use of service adversely affects the Company's facilities or service to other customers.
- (3b) For unauthorized reconnection after disconnection with due notice.
- (4b) For unauthorized use of or tampering with the Company's service or facilities.
- (c) Reconnect - After service has been discontinued at the Company's option for any of the above reasons, service will be reconnected only after the customer has taken necessary corrective action and made satisfactory arrangement for payment of all fees and charges, including any applicable reconnect fees and deposits to guarantee payment for service.

ISSUED January 1, 1987BY: E. M. THEISEN
PRESIDENT
EAU CLAIRE, WISCONSINEFFECTIVE FOR SERVICE RENDERED ON
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STANDARD RULES AND REGULATIONS15. Rate Application

A. The rates specified in this schedule are predicated upon the delivery of each class of service to a single metering point for the total requirements of each separate premises of the customer, unless otherwise provided for in these Rules and Regulations. In no case may service be shared with another or transmitted off the premises at which it is delivered. Service at different points and at different premises shall be separately metered and separately billed.

- (1) Selection of Rates - In some cases the customer is eligible to take service under any one or two or more rates. Upon request, the Company will advise the customer in the selection of the rate which will give him the lowest cost of service, based on the information provided to the Company, but the responsibility for the selection of the rate lies with the customer.

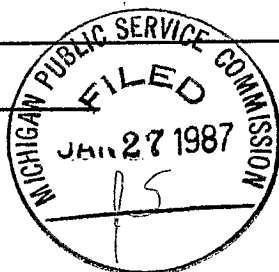
After the customer has selected the rate under which he elects to take service, the customer will not be permitted to change from that rate to another rate until at least twelve months have elapsed. Neither will the customer be permitted to evade this rule by temporarily terminating service. However, the Company may, at its option, waive the provisions of this paragraph where it appears that an earlier change is requested for permanent rather than for temporary or seasonal advantage. The intent of this rule is to prohibit frequent shifts from rate to rate.

No refund will be made of the difference in charges under different rates applicable to the same class of service.

- (2) Apartment Buildings and Multiple Dwellings - An apartment building or multiple dwelling shall be considered as one containing nine or more rooms in which single rooms, suites or groups of rooms have individual cooking and kitchen sink accommodations. Service supplied through a single meter to an apartment building or multiple dwelling containing less than three apartments may be billed on the residential service rates on a single customer basis. Service supplied through a single meter to an apartment building or multiple dwelling containing three or more apartments shall be billed in accordance with the following provisions:

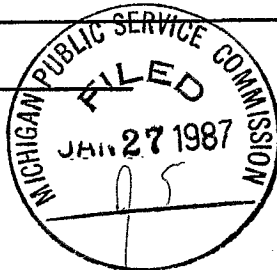
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AND AFTER January 1, 1987ISSUED UNDER AUTHORITY OF THE MICHIGAN
PUBLIC SER. COMM. DATED November 4, 1986IN CASE NO. U-8493

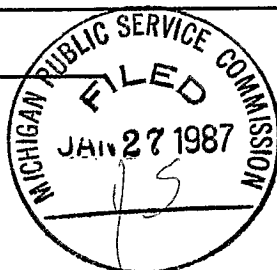
STANDARD RULES AND REGULATIONS

- (a) Apartment Buildings or Multiple Dwellings Containing Three or Four Apartments - The customer may have the option of being billed under either the Residential Service Rate, or the appropriate General Service or Commercial and Industrial Service Rate. For the purpose of billing under the Residential Service Rate, the customer charge, the kilowatthour blocks and the minimum charge shall be multiplied by the number of apartments served through one meter.
- (b) Apartment Buildings or Multiple Dwellings Containing Five or More Apartments - The customer shall be billed under the appropriate General Service or Commercial and Industrial Service Rate.
- (c) "Master Metering" will be limited to existing customers.
- (3) Homes or Dormitories for Groups Other Than Private Family Units - Service supplied through a single meter to rooming houses, dormitories, nursing homes, and other similarly occupied buildings containing sleeping accommodations for more than six persons shall be classified as commercial and billed on the appropriate service rate.
- (4) Farm Service - Service shall be available to farms for residential use under the Residential Service Rate. Service may be used through the same meter for any purpose as long as such use is confined to service for the culture, processing and handling of products grown or used on the customer's farm. Use of service for purposes other than that set forth above shall be served and billed on the appropriate General Service Rate.
- (5) Year-Around Service - Service to a customer at the address shown on his or her driver's license and/or voter's registration card.
- (6) Seasonal Service - Service to customers other than to year-around customers.

ISSUED January 1, 1987BY: E. M. THEISEN
PRESIDENT
EAU CLAIRE, WISCONSINEFFECTIVE FOR SERVICE RENDERED ON
AND AFTER January 1, 1987ISSUED UNDER AUTHORITY OF THE MICHIGAN
PUBLIC SER. COMM. DATED November 4, 1986IN CASE NO. U-8493

STANDARD RULES AND REGULATIONS**16. Deposits - Commercial and Industrial**

- A. Amount of the deposit will be limited to not more than two (2) times the customer's estimated maximum bill.
- B. Interest on deposits will be accrued at the rate of 7% per year and will be payable annually on request or at the time the deposit is returned.
- C. Deposits will be refunded when the customer has established a satisfactory payment record with the Company. Payment on time of bills for utility service for two (2) years shall be evidence of satisfactory credit.
- D. The Company may require a new or increased deposit from an existing customer when it determines that the customer's payment record with the Company has become unsatisfactory. An unsatisfactory payment record is one consisting of two or more late payments in any twelve-(12) month period or one necessitating the discontinuance of energy service.
- E. Failure to make the required deposit as a condition to receiving service shall constitute grounds for discontinuance of service.
- F. Deposits with accrued interest shall be refunded or credited to the final bill after discontinuance of service.

ISSUED January 1, 1987BY: E. M. THEISEN
PRESIDENT
EAU CLAIRE, WISCONSINEFFECTIVE FOR SERVICE RENDERED ON
AND AFTER January 1, 1987ISSUED UNDER AUTHORITY OF THE MICHIGAN
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Section III - CONSTRUCTION POLICY

1. General Information

This section of the Rules and Regulations sets forth the terms and conditions under which the Company will construct and extend its facilities to serve new loads and replace, relocate or otherwise modify its facilities.

Contributions in aid of construction and other deposits made with the Company under the provisions of this section shall be considered nonrefundable, except where provisions for refunds are specifically stated.

No refunds will be made in excess of the refundable amount deposited and deposits shall not bear interest. Refunds, where applicable, will be made in accordance with the terms stated hereinafter.

Each distribution line extension shall be a separate, distinct unit and any further extension therefrom shall have no effect upon the agreements under which such extension is constructed.

All construction of extensions shall conform to the Company's standards as well as national, state and local electrical codes.

Issued: December 1, 1995

By: J.A. Noer
President
Eau Claire, Wisconsin



Effective for Service Rendered on
and after January 1, 1996

Issued Under Authority of the Michigan
P.S.C. Dated October 12, 1995
In Case No. U-10903

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In all cases where, in the opinion of the Company, its investment in facilities appears extraordinary or unusual, and where extensive repairing or rebuilding of any facilities is necessary to accommodate the customer or group of customers making application for service, the right is reserved to require the customer or group of customers to be served to execute a contract for a definite period of service, and to otherwise protect the Company against possible losses. Prospective customers entering into a venture which is considered by the Company as a poor risk for the investment of its capital may be required to finance the entire additional investment needed to serve the customer, refundable only after five years of proven stability and then only in accordance with the filed extension rules for the class of service involved.

The title to every extension at all times is with the Company. The Company reserves the right at all times to add customers to an extension and to make new extensions to an existing extension, under the provisions of these rules, without procuring the consent of any customer or customers contributing to the original construction costs.

Aid-to-construction payment shall be made prior to the start of such construction. Where a group of customers will be served by a single extension, applicable charges in aid-to-construction may be allocated in an equitable manner by the Company.

The Company will furnish, install, maintain, and replace when necessary, the service wires from the distribution system to the point of attachment as defined in paragraph 9, Sheet Number 25. Such service drop, including the meter and cable support bracket, will be supplied by the Company at no cost to the customer. The customer will be responsible for the installation of the customer-owned meter socket and the Company-owned cable support bracket.

Issued: January 1, 1987

By: J.A. Noer
President
Eau Claire, Wisconsin



Effective for Service Rendered on
and after January 1, 1987

Issued Under Authority of the Michigan
P.S.C. Dated November 4, 1986
In Case No. U-8493

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2. Extension Policy: Overhead and Underground Facilities

Additional requirements for underground facilities set forth in subsection 3, Sheet Number 40.

A. Residential Service

(1) Charges - For each permanent year-around dwelling, the Company will provide a single-phase line extension, excluding service drop, at no additional charge for a distance of 600 feet, of which no more than 200 feet is a lateral extension on the customer's private property. For each permanent seasonal-type dwelling, the Company will provide at no extra charge a 200-foot extension from a main line distribution feeder. Distribution line extension in excess of the above footages will require an advance deposit in the entire amount of the excess construction costs. There will also be a non-refundable contribution equal to the cost of right-of-way clearing. Three-phase extensions will be on the same basis as Commercial and Industrial.

(2) Measurement - The length of any main line distribution feeder extension will be measured along the route of the extension from the Company's nearest facilities from which the extension can be made to the customer's property line. The length of any lateral extension on the customer's property shall be measured from the customer's property line to the service pole. Should the Company for its own reasons choose a longer route, the applicant will not be charged for the additional distance; however, if the customer requests special routing of the line, the customer will be required to pay the extra cost resulting from the special routing.

Issued: June 17, 1996

By: J.A. Noer
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Eau Claire, Wisconsin



Effective for Service Rendered on
after June 6, 1996

Issued Under Authority of the Michigan
P.S.C. Dated June 5, 1996
In Case No. U 10903

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(Continued from Sheet No. 36)

- (3) Refunds - During the five- (5) year period immediately following the date of payment, the Company will make refunds of the charges paid for a financed extension under provisions of paragraph (1), Sheet Number 36. The amount of any such refund shall be \$500 for each permanent electric service subsequently connected directly to the facilities financed by the Customer. Directly connected Customers are those which do not require the construction of more than 300 feet of lateral primary distribution line. Such refunds will be made only to the original contributor. The total refund shall not exceed the refundable portion of the contribution.

B. Commercial, Industrial or Street Lighting Service

- (1) Company Financed Extensions - The Company will finance the construction cost necessary to extend its facilities to serve commercial, industrial, or street lighting customers, when such investment does not exceed two (2) times the estimated additional annual *distribution* revenue anticipated to be collected from customers or street lighting units initially served by the extension or installation. *Distribution revenues are those revenues generated by Customer and distribution related charges, not including revenues generated by power supply related charges. For Customers who receive service according to a bundled service schedule, revenue tests shall be based upon total annual revenues rather than distribution revenues.*
- (2) Charges - When the estimated cost of construction of such facilities exceeds the Company's maximum initial investment as defined in paragraph B. (1) above, the applicant shall be required to make a deposit in the entire amount of such excess construction costs. Owners or developers of mobile home parks shall be required to deposit the entire amount of the estimated cost of construction, subject to the refund provisions of paragraph B.(3), Sheet Number 38.

(continued on Sheet No. 38)

Issued December 28, 2001 by

Effective: January 1, 2002

J. L. Larsen
President
Eau Claire, Wisconsin



Issued Under Authority Of The
Michigan Public Service Commission
dated October 11, 2001
in Case No. U-12651

STANDARD RULES AND REGULATIONS

(Continued from Sheet No. 37)

(3) Refunds - The Company will make refunds on deposits collected under the provisions of paragraph B. (2), Sheet Number 37, in cases where actual experience shows that the electric revenues supplied by the customer are sufficient to warrant a greater initial investment by the Company. Such refunds shall be computed as follows:

(a) Original Customer

At the end of the first complete twelve-(12) month period immediately following the date of initial service, the Company will compute a revised initial investment based on two (2) times the actual *distribution* revenue provided by the original customer(s) in the twelve-(12) month period. Any amount by which twice the actual annual *distribution* revenue exceeds the Company's initial investment will be made available for refund to the customer; no such refund shall exceed the amount deposited under provisions of paragraph B. (2), Sheet Number 37. *Distribution revenue is defined in Paragraph B. (1), Sheet Number 37.*

(b) Refunds for additional new customers directly connected to the financial extension during the refund period will be governed by paragraph 2.A.(3), Sheet Number 37.

C. Service Extensions to Loads of Questionable Permanence

When service is requested for loads of questionable permanence such as, but not limited to, saw mills, mixer plants, gravel pits, oil wells, oil facilities, etc., the Company will install, own, operate and maintain all distribution facilities up to the point of attachment to the customer's service equipment subject to the following:

(1) Charges - Prior to commencement of construction, the customer shall make a deposit with the Company in the amount of the

(continued on Sheet No. 39)

Issued December 28, 2001 by

J. L. Larsen
President
Eau Claire, Wisconsin



Effective: January 1, 2002

Issued Under Authority Of The
Michigan Public Service Commission
dated October 11, 2001
in Case No. U-12651

STANDARD RULES AND REGULATIONS

(Continued from Sheet No. 38)

Company's estimated construction and removal costs less salvage. Such estimates shall include the cost of extending the Company distribution facilities and of increasing capacity of its existing facilities to serve the customer's load.

- (2) Refunds - At the end of each year the Company will make a refund on the amount deposited from revenues derived from the customer for electric service from the facilities covered by the deposit. The amount of such refund for any given year or part thereof shall be computed as follows:
- (a) Year-to-year for the first four years of the deposit period.
- (1a) Twenty percent (20%) of the deposit if this amount is equal to or less than 20% of the new annual *distribution* revenue, excluding fuel adjustment and sales tax revenues.
- (2a) Twenty percent (20%) of the new annual *distribution* revenue, excluding fuel adjustment and sales tax revenues if this amount is less than 20% of the deposit.
- (b) The final year of the five-year refund period.
- (1b) If at the end of the five-year refund period the total *distribution* revenue for that period, excluding fuel adjustment and sales tax revenues, is equal to or greater than five (5) times the original deposit, the balance of the deposit will be refunded.
- (2b) If at the end of the five-year refund period the total *distribution* revenue, excluding fuel adjustment and sales tax revenues, is less than five (5) times the original deposit, the refund for the fifth year will be applied in accordance with (1a) or (2a) above.

Distribution revenue is defined in Paragraph B. (1), Sheet Number 37. No refund is to be made in excess of the deposit and the deposit shall bear no interest.

Issued December 28, 2001 by

Effective: January 1, 2002

J. L. Larsen
President
Eau Claire, Wisconsin



Issued Under Authority Of The
Michigan Public Service Commission
dated October 11, 2001
in Case No. U-12651

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3. Underground Service Policy

A. General

This portion of the rules provides for the extension and/or replacement of underground electric distribution facilities.

The Company, at the request of the developer, will install an underground electric distribution system for all new residential subdivisions, mobile home parks, multiple occupancy building complexes and commercial subdivisions in cooperation with the developer or owner, evidenced by a signed agreement and in compliance with the following specific conditions:

- (1) The developer or owners must provide for recorded easements or rights-of-way acceptable to the Company. The easements are to be coordinated with other utilities and will include easements for street lighting cable.
- (2) The developer or owner must provide for grading the easement to finished grade or for clearing the easement of trees, large stumps and obstructions sufficiently to allow trenching equipment to operate. Survey stakes indicating easements, lot lines and grade must be in place. The developer or owner must certify to the Company that the easements are graded to within four (4) inches of final grade before the underground distribution facilities are installed.

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Issued: December 1, 1995

By: J. A. Noer
President
Eau Claire, Wisconsin



Effective for Service Rendered on
and after January 1, 1996

Issued Under Authority of the Michigan
P.S.C. Dated October 12, 1995
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- (3) The developer or owner requesting underground construction must make a non-refundable contribution to the Company for primary switching cabinets. When a switching cabinet is required exclusively for one customer, that customer will contribute the actual installed cost of the switching cabinet. When more than one customer is served from the switching cabinet, each customer's contribution will be prorated total installed cost of the switching cabinet based on the number of positions required for each customer.
- (4) If trenching is required where practical difficulties exist, such as in rock or in sodden ground or when boring under streets, driveways, patios or any other paved areas, the contribution in aid of construction shall be an amount equal to the total construction costs. C
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- (5) The developer or owner will be responsible for any costs of relocating Company facilities to accommodate changes in grade or other changes after underground equipment is installed, and also be responsible for any damage to Company facilities caused by his operations or the operations of his contractors. An amount equal to the total costs involved, including overheads, is required for relocation or rearrangement of facilities, whether specifically requested by the developer or owner or due to the facilities becoming endangered by a change in grade.
- (6) An additional amount equal to the actual cost per foot will be charged for practical difficulties associated with winter construction in the period from November 15 to April 30, inclusive. This charge will not apply to jobs which are ready for construction and for which the construction meeting has been held prior to September 30. C

Issued: December 1, 1995

By: J. A. Noer
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Effective for Service Rendered on
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Issued Under Authority of the Michigan
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B. Residential Service

If underground is requested, these provisions will apply to permanent dwellings. Mobile homes will be considered permanent dwellings when meeting the Company's requirements for permanent installations.

(1) New Platted Subdivisions

Distribution facilities in all new residential subdivisions and existing residential subdivisions in which electric distribution facilities have not already been constructed shall be placed underground, except that a lot facing a previously existing street or county road and having an existing overhead distribution line on its side of the street or county road shall be served with an underground service from these facilities and shall be considered a part of the underground service area.

- (a) Distribution System - The Company will install an underground distribution system, including primary and secondary cable and all associated equipment, to provide service to the lot line of each lot in the subdivision.

For purposes of definition, all one-family and two-family buildings on individual lots are residential. The Company will furnish, install, own and maintain the entire underground electric distribution system including the service lateral cables for new residential subdivisions. The trenches for primary or secondary main cables will be occupied jointly by facilities of the Company and other utilities where satisfactory agreement for reimbursement exists between the Company and other utilities.

The service normally available from the system will be at secondary voltage, single-phase, three-wire, 60 hertz. Three-phase service will be made available for schools, pumping stations, and other special installations only under terms of a separate agreement. Certain related equipment, such as pad-mounted transformers, switching equipment and service pedestals may be above grade. The area must be suitable for the direct burial installations of cable.

Issued: January 1, 1987

By: J. A. Noer
President
Eau Claire, Wisconsin



Effective for Service Rendered on
and after January 1, 1987

Issued Under Authority of the Michigan
P.S.C. Dated November 4, 1986
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The use of the lot front foot measurements in these rules shall not be construed to require that the underground electric distribution system be placed at the front of the lot.

Where sewer and/or water lines will parallel Company cables, taps must be extended into each lot for a distance of four (4) feet beyond the route of the cables prior to installation of the cables.

The property owner shall not make any changes in established grade in or near the easement that will interfere with utility facilities already installed. In the event the property owner requests relocation of facilities, or such facilities are endangered by change in grade, the property owner shall pay the cost of the relocation or rearrangement of the facilities.

(1a) Charges - Prior to commencement of construction, the owner or developer shall deposit with the Company an amount equal to the estimated cost of construction of the distribution system.

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Issued: December 1, 1995

By: J. A. Noer
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Eau Claire, Wisconsin



Effective for Service Rendered on
and after January 1, 1996

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P.S.C. Dated October 12, 1995
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- (2a) Refunds - Following completion of its construction work order covering construction of the distribution system, the Company will refund any amount by which its original estimate exceeds the actual construction costs. During the five (5) year period immediately following completion of the construction, the Company will refund \$500 for each permanent residential customer connected within the subdivision. Such refunds will be made only to the original depositor and in total shall not exceed the refundable portion of the deposit. The deposit shall bear no interest.
- (3a) Measurement - The front foot measurement of each lot to be served by a residential underground distribution system shall be made along the contour of the front lot line. The front lot line is that line which usually borders on or is adjacent to a street. However, when streets border on more than one side of a lot, the shortest distance shall be used. In case of a curved lot line which borders on a street or streets and represents at least two sides of the lot, the front foot measurement shall be considered as one-half the total measurement of the curved lot line. The use of the lot front foot measurement in these rules shall not be construed to require that the underground electric distribution facilities be placed at the front of the lot.
- (b) Service Laterals - The Company will install, own, operate and maintain an underground service lateral from termination of its facilities at the property line to a metering point on each new residence in the subdivision.
- (1b) Maximum Length - The maximum service length is 200 feet. For service over 200 feet the applicant will be required to make a non-refundable deposit for the entire amount of excess construction costs over 200 feet.
- (2b) Measurement - The "trench feet" shall be determined by measuring from the termination of Company facilities at the property line along the route of the trench to a point directly beneath the electric meter.

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Issued: December 1, 1995

By: J. A. Noer
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Effective for Service Rendered on
and after January 1, 1996

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P.S.C. Dated October 12, 1995
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(2) Other Residential Underground Facilities

- (a) At the option of the applicant(s), the Company will provide underground facilities from existing overhead facilities in unplatted areas or in subdivisions where overhead electric distribution facilities have been installed.
- (b) The Company reserves the right to refuse to install its facilities underground in cases where, in the Company's opinion, such construction would be impractical or present a potential detriment to the service to other customers. The Company may designate portions of existing subdivisions as "underground service areas" where, in the Company's opinion, such designation would be desirable for aesthetic or technical reasons. All future applicants for service in areas so designated will be provided with underground service subject to the applicable provisions of these rules.

(3) Extension of Existing Distribution Systems in Platted Subdivisions

Any such extension shall be considered a distinct, separate unit, and any subsequent extensions therefrom shall be treated separately.

- (a) Charges - Charges will be in accordance with charges as set forth in paragraph 2.A.(1), Sheet Number 36.
- (b) Refunds - The Company will make available for refund to the original depositor from amounts contributed in aid of construction by subsequent applicants as provided in paragraph (3)(a) above the amount included in the original deposit to cover the front footage of the lot(s) owned by the subsequent applicant(s). The total amount refunded shall not exceed the amount of the original deposit, and will be made

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Issued: December 1, 1995

By: J. A. Noer
President
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Effective for Service Rendered on
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only to the original depositor. The Company will endeavor to maintain records for such purposes but the depositor is ultimately responsible to duly notify the Company of refunds due; any refund not claimed within five (5) years after completion of construction shall be forfeited. Refunds made under the provisions of the paragraph shall be in addition to refunds made under the Company's overhead extension policy.

- (c) Measurement - The lot front footage used in computing charges and contributions in paragraph (3)(a) above shall be measured the same as for new subdivisions as set forth in paragraph (3a), Sheet Number 44. The front footage used in determining the amount of the original deposit or any refunds of subsequent contributions shall include only the frontage of lots directly served by the distribution system extension covered by the original deposit.

(4) Distribution Systems in Unplatted Areas

- (a) The Company will extend its primary or secondary distribution system from existing overhead or underground facilities. When any such extension is made from an existing overhead system, the property owner may be required to provide an easement(s) for extension of the overhead system to a pole on his property where transition from overhead to underground can be made.

- (1a) Contribution - Prior to commencement of construction, the applicant shall make a contribution in aid of construction as set forth in paragraph 2.A.(1), Sheet Number 36. Refunds will be based on the refund policy as set forth in paragraph 2.A.(3), Sheet Number 37.

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Issued: December 1, 1995

By: J. A. Noer
President
Eau Claire, Wisconsin



Effective for Service Rendered on
and after January 1, 1996

Issued Under Authority of the Michigan
P.S.C. Dated October 12, 1995
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(5) Service Laterals

(a) The Company will install, own, operate and maintain an underground service lateral from the termination of its primary or secondary system to a metering point on each new residence to be served. Such underground service laterals may be served either from an underground or overhead system.

(1a) Maximum Length - The maximum service length is 200 feet. For service over 200 feet the applicant will be required to make a non-refundable deposit for the entire amount of excess construction costs over 200 feet.

(2a) Measurement - The "trench length" shall be determined by measuring from the pole or underground secondary terminal to which the service lateral is connected along the route of the lateral trench to a point directly beneath the electric meter.

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C. Non-residential Service

(1) Commercial Service - Distribution facilities in the vicinity of new commercial loads and built solely to serve such loads will be placed underground (optional for companies serving the Upper Peninsula.) This includes service to all buildings used primarily for business purposes, where the major activity is the sale of goods or services at wholesale or retail. This category shall include, but not be limited to, apartment houses, motels and shopping centers.

It shall not be mandatory that any new commercial or industrial distribution systems or service connections be placed underground where, in the Company's judgment, any of the following conditions exist:

Such facilities would serve commercial or industrial customers having loads of temporary duration; or

Issued: December 1, 1995

By: J. A. Noer
President
Eau Claire, Wisconsin



Effective for Service Rendered on
and after January 1, 1996

Issued Under Authority of the Michigan
P.S.C. Dated October 12, 1995
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Such facilities would serve commercial or industrial customers in areas where little aesthetic improvement would be realized if such facilities were placed underground;
or

Such facilities would serve commercial or industrial customers in areas where it is impractical to design and place such facilities underground, because of uncertainty of the size and character of the loads to be ultimately served therefrom.

The Company will furnish, install, own and maintain the entire underground electric distribution system including the service lateral cables for new commercial subdivision. Generally, the trenches will be occupied jointly by facilities of the Company and other utilities where satisfactory agreement for reimbursement exists between the Company and the other utilities.

The service for individual customers within a commercial subdivision will be furnished as provided for in "underground service connections." Certain related equipment, such as pad-mounted transformers, switching equipment and service pedestals, may be above grade.

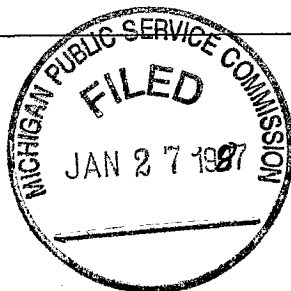
In the event the developer(s), owner(s), customer(s) or tenant(s) request relocation of facilities which are endangered by change in grade, the total cost of relocation or rearrangement of the facilities shall be borne by the requesting party(ies).

The Company will install "underground service connections" to commercial and industrial customers and other installations within designated underground districts in cooperation with the developer or owner, evidenced by a separate signed agreement, subject to the following specific conditions:

When required, the developer or owner must provide suitable space and the necessary foundations and/or vaults for equipment, and provide trenching, back-filling, conduits and manholes acceptable to the Company, for installation of cables on his property.

Issued: January 1, 1987

By: J. A. Noer
President
Eau Claire, Wisconsin



Effective for Service Rendered on
and after January 1, 1987

Issued Under Authority of the Michigan
P.S.C. Dated November 4, 1986
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- (a) Contribution - Contributions will be in accordance with charges as set forth in paragraph 2.B.1 Sheet Number 37.
- (b) Measurement - "Trench length" shall be determined by measuring along the centerline of the trench as follows:
- (1b) Primary Extensions - shall be measured along the route of the primary cable from the transition pole to each transformer or other primary termination.
 - (2b) Secondary Extensions - shall be measured from each transformer or other secondary supply terminal along the route of the secondary cable to each secondary pedestal or termination. No charge will be made for secondary cable laid in the same trench with primary cable.
 - (3b) Service Laterals - shall be measured from the pole or underground secondary terminal to which the service lateral is connected along the route of the lateral trench to the point of connection to the customer's facilities. No charge will be made for service laterals laid in the same trench with primary or secondary cable.
- (2) Industrial Service - Distribution facilities in the vicinity of new industrial loads and built solely to serve such loads will be placed underground at the option of the applicant. This includes service to all buildings used primarily for the assembly, processing or manufacturing of goods.
- (a) Contribution - Contributions will be in accordance with charges as set forth in paragraph 2.B.1 Sheet Number 37.

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Issued: December 1, 1995

By: J. A. Noer
President
Eau Claire, Wisconsin



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- (3) Mobile Home Parks - Distribution facilities in new mobile home parks shall be placed underground. Extension from existing overhead systems in mobile home parks will be placed underground at the option of the park owner.

The Company will furnish, install, own and maintain the entire underground electric distribution system including the pre-meter portion of the service lateral cables for new mobile home parks. The trenches for primary or secondary main cables will be occupied jointly by facilities of the Company and other utilities where satisfactory agreement for reimbursement exists between the Company and the other utilities.

The service for tenant loads normally available from the system will be at secondary voltage, single-phase, 120/240 volt, three-wire, 60 hertz. Three-phase service will be made available for pumps and service installations only under terms of a separate agreement. Certain related equipment, such as pad-mounted transformers, switching equipment and service pedestals may be above grade. The area must be suitable for the direct burial installation of cable.

This service is limited to mobile home parks in which the service is metered by the Company at secondary voltage.

Company cables shall be separated by at least five feet from paralleling underground facilities which do not share the same trench. The park owner's cable systems, such as community antenna systems, should be in separate trenches, if possible. Subject to an agreement with the Company, these cable systems may occupy the same trench. The park owner must agree to pay a share of the trenching cost plus the extra cost of the additional backfill, if required, and agree to notify the other using utilities when maintenance of his cables requires digging in the easement.

The park owner must provide for each mobile home lot a meter pedestal of a design acceptable to the Company.

Issued: January 1, 1987

By: J. A. Noer
President
Eau Claire, Wisconsin



Effective for Service Rendered on
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In the event the park owner requests relocation of facilities or such facilities are endangered by change in grade, the park owner shall pay the cost of the relocation or rearrangement of the facilities.

- (a) Contribution - Contributions will be in accordance with charges as set forth in paragraph 2.A.(1) Sheet Number 36.

D. Other Conditions

- (1) Obstacles to Construction - Where unusual construction costs are incurred by the Company due to physical obstacles such as, but not limited to: rock, surface water; frost; other utility facilities; heavy concentration of tree roots; or roadway crossing, the applicant(s) shall make a nonrefundable contribution in aid-of-construction equal to the total construction cost. The Company reserves the right to refuse to place its facilities under road or railroad rights-of-way in cases where, in the Company's judgment, such construction is impractical.
- (2) Contribution - Prior to commencement of construction, the applicant(s) shall make a contribution in aid-of-construction as required by the extension rules. Refunds will be based on the refund policy as stated in paragraph 2.A.3, Sheet number 37.

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- (3) Replacement of Overhead Facilities - Existing overhead electric distribution lines shall, at the request of applicant(s), be replaced with underground facilities where, in the opinion of the Company, such replacement will not be detrimental to the electric service to other customers.

Before construction is started, the applicant(s) shall be required to pay the Company the depreciated cost (net cost) of the existing overhead facilities, plus the cost of removal, less the value of materials salvaged, and also make a contribution in aid-of-construction toward the installation of underground facilities in an amount equal to the estimated cost of the underground facilities.

- (4) Underground Installations for Company Convenience - Where the Company, for its own convenience, installs its facilities underground, the differential between estimated overhead construction costs and underground costs of such installation will be borne by the Company. All other costs will be governed by the Company's Extension Policy.
- (5) Underground Extensions on Adjacent Lands - When a primary extension to serve an applicant or group of applicants must cross adjacent lands on which underground construction is required by the property owner (such as on state or federal lands) the applicant(s) shall make a contribution equal to the estimated difference in cost between the underground and equivalent overhead facilities. The Company may establish a per-foot charge to be considered the difference in cost. Such charge shall be adjusted from time to time to reflect the Company's actual construction cost experience.
- (6) Local Ordinances - The Company reserves the right, where local ordinances, requirements are more stringent than these rules, to apply to the Michigan Public Service Commission for such relief as may be necessary.
- (7) Equipment Rental - Rental of electric utility equipment is available upon approval of the Company. Monthly charges shall be 2.00% of the installed cost of the facilities, but shall in no case be less than \$1.00.

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4. Miscellaneous General Construction Policy

Except where specifically designated as overhead or underground construction policies, the following general policies will be applied to either overhead or underground construction:

A. Easements and Permits

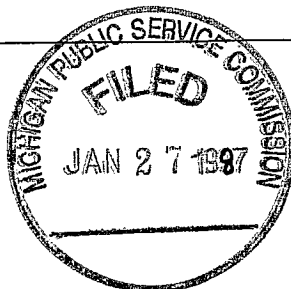
- (1) New Residential Subdivisions - The developer of a new residential subdivision shall cause to be recorded with the plat of the subdivision a public utility easement approved by the Company for the entire plat. Such easement shall include a legal description of areas within the plat which are dedicated for utility purposes, and also other restrictions as shall be determined by the Company for construction, operation, maintenance and protection of its facilities.
- (2) Other Easements and Permits - Where suitable easements do not exist, the Company will provide the necessary easement forms and solicit their execution. The applicant(s), as a condition of service, will be ultimately responsible for obtaining all easements and permits as required by the Company for construction, operation, maintenance and protection of the facilities to be constructed. Where state and federal lands are to be crossed to extend service to an applicant or group of applicants, the additional costs incurred by the Company for rights-of-way and permit fees shall be borne by the applicant(s).

B. Temporary Service

Customers desiring temporary service for a short time only, such as for construction jobs, traveling shows, outdoor or indoor entertainments or exhibitions, etc., shall pay the charge per customer per month provided in applicable rate schedules. In addition, such customer shall pay installation and removal charges as follows:

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- (1) When 120/240 volt single-phase service is desired and when such service can be provided at the site without exceeding 100 feet overhead or ten (10) feet underground at the time temporary service is desired, the charge for installation and removal of temporary, single-phase, three-wire, 120/240 volt service shall be:

For Temporary Overhead Service \$125.00

- (2) When 120/240 volt single-phase service is desired and requires more than 100 feet overhead or ten (10) feet underground of extension, or if other than 120/240 volt single-phase service is desired, the charge for installation and removal shall be based on the cost thereof.

The customer shall be required to deposit with the Company in advance of construction an amount (in excess of any salvage realized) to cover the cost of installing and removing temporary facilities, plus the estimated cost of service under the terms of applicable rate schedules. Meters may be read daily and the deposit modified as the energy used may justify such modifications.

If service extends for a period in excess of six consecutive months, the customer may qualify for other of the Company's available rates, provided he meets all of the applicable provisions of the filed tariffs.

5. Moving of Buildings or Equipment

When the Company is requested to assist in the moving of buildings or equipment through, under or over the Company's distribution lines, the Company will require a deposit from the mover in advance of providing such assistance. The amount of the deposit required will be based upon the Company's estimate of the probable cost, but in no event will the required deposit be less than \$100. Upon completion of moving assistance, the Company will determine actual costs and will bill or credit the mover

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according to the difference between actual costs and the deposit, except that the minimum actual cost will not be less than \$100. Actual costs will be determined in accordance with the following:

Within regular working hours:

- A. Average individual wage rate applicable to employee(s) involved.
- B. Actual material used.
- C. Appropriate overhead charges.

Outside regular working hours:

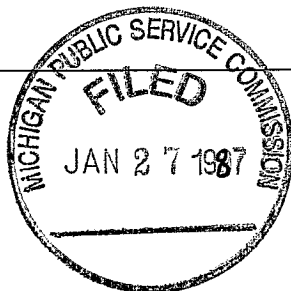
- A. Overtime wage rate applicable to employee(s) involved.
- B. Actual materials used.
- C. Appropriate overhead charges.
- D. The Minimum billing for Moving Assistance shall not be less than \$100.00.

6. Relocation of Facilities

- A. The Company will cooperate with political subdivisions in the construction, improvement or rehabilitation of public streets and highways. It is expected that the Company will receive reasonable notice so that any required relocation work can be properly scheduled.
- B. If the Company's poles, anchors, or other appurtenances are located within the confines of the public right-of-way, the Company will make the necessary relocation at its own expense with exceptions:
 - (1) The facilities were originally installed within the confines of the public right-of-way at the request of the political entity.
 - (2) Existing facilities being within the confines of a new public right-of-way obtained after the construction of the Company's facilities.
 - (3) Facilities provide public services such as lighting, traffic signals, etc.

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- C. If the Company's poles, anchors or other appurtenances are located on private property, the political subdivision must agree in advance to reimburse the Company for any expenses involved in relocating its facilities.
- D. When the Company is requested to relocate its facilities for reasons other than road improvements, any expense involved will be paid for by the firm, person or persons requesting the relocation, unless one or more of the following conditions are met:
- (1) The relocation is made for the convenience of the Company.
 - (2) The relocation is associated with other regularly scheduled conversion or construction work at the same location and can be done at the same time.
- E. Before actual relocation work is performed under paragraph C. and D. above, the Company will estimate the cost of moving the poles, anchors, or other appurtenances and an advance deposit in the amount of the estimate must be received from the firm, person or persons requesting such relocation. Upon completion of relocation work, the Company will determine the actual costs of the relocation, and the firm, person or persons requesting the relocation will be billed or credited for the difference between the advance deposit and the actual cost.

7. Construction Schedules

Scheduling of construction shall be done on a basis mutually agreeable to the Company and the applicant. The Company reserves the right not to begin construction until the customer has demonstrated to the Company's satisfaction his intent to proceed in good faith with installation of his facilities by acquiring property ownership, obtaining all necessary permits and/or, in the case of mobile homes, meeting the Company's requirements for permanency.

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8. Design of Facilities

The Company reserves the right to make final determination of selection, application, location, routing and design of its facilities. Where excessive construction costs are incurred by the Company at the request of the customer, the customer may be required to reimburse the Company for such excess costs.

9. Billing

For customer(s) who fail to take service two (2) months after an extension has been completed to the premises and within the time period requested by the customer(s), the Company shall have the right, after said two (2) month period, to commence billing the customer under the Company's applicable rates and rules for the type of service requested by the customer(s).

10. Service to Islands

The Company will install, own and maintain the electric distribution facilities required to serve a group of customers located on an island. Where they may be only an individual customer located on a private island, the Company will install the metering facilities on the mainland adjacent to the water crossing. The customer will be responsible for obtaining all required permits, and the installation, maintenance, repair, replacement, and ownership of all facilities beyond the Company's point of metering.

Issued: January 1, 1987

By: J.A. Noer
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Eau Claire, Wisconsin



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SECTION IV

Meter Requirements

1. Metered Measurement of Electricity Required; Exceptions.

- A. All electricity that is sold by a utility shall be on the basis of meter measurement, except for temporary service or installations where the load is constant and the consumption may be readily computed, or except as provided for in a utility's filed rates.
- B. Where practicable, the consumption of electricity within the utility or by administrative units associated with the utility shall be metered.

2. Installation of Defective Meter Prohibited.

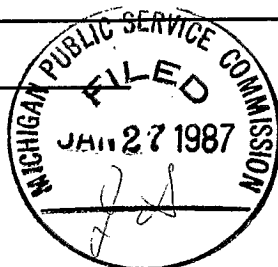
A meter shall not be installed if it is known to be mechanically or electrically defective, to have incorrect constants, or if it has not been tested, and adjusted if necessary, pursuant to Part IV of these rules. The capacity of the meter and the register mechanism shall be consistent with the electric load requirements of the customer.

3. Meter Reading Sheets or Cards; Content.

- A. The meter reading sheets or cards shall show all of the following information:
 - (1) Customer's name, address, and rate code.
 - (2) Identifying number or description of the meter, or both.
 - (3) Meter readings.
 - (4) Whether or not the reading has been estimated. A lack of meter reading indication on computer-type cards indicates an estimated reading.
 - (5) Any applicable multiplier or constant.

ISSUED January 1, 1987

BY: E. M. THEISEN
PRESIDENT
EAU CLAIRE, WISCONSIN



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4. Meter Charts and Data Collection System.

- A. All meter and data collection systems charts taken from recording meters shall be marked with the date of the record, the meter number, customer's name and location, and the chart multiplier.
- B. Electronic data collection systems shall contain sufficient information to identify the customer name, location, date of record, equipment numbers, and multipliers.

5. Meter Multiplier.

If it is necessary to apply a multiplier to the meter readings, the multiplier shall be marked on the face of the meter register.

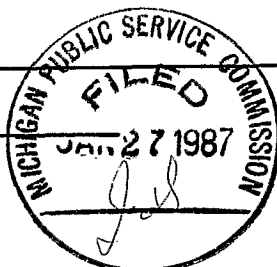
6. Meter Reading Interval.

- A. For commercial and industrial customers, the utility shall schedule meters to be read monthly, except that authority may be obtained from the Commission for reading the meters at other than monthly intervals. To the extent practicable, utilities shall not send a commercial or industrial customer 2 successive estimated bills. The utility may permit the commercial or industrial customer to supply the meter readings on a form furnished by the utility, if an employee of the utility reads the meter at least once each 12 months.
- B. For residential customers, the utility shall comply with the requirements set forth in R 460.2111 to R 460.2115 of the Michigan Administrative Code.

7. Demand Meter Registration.

When an indicating or graphic demand meter registration is used for billing, the installation shall normally be designed so that the highest anticipated annual demand reading used for billing will appear in the upper half of the meter's range.

ISSUED January 1, 1987



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Customer Relations

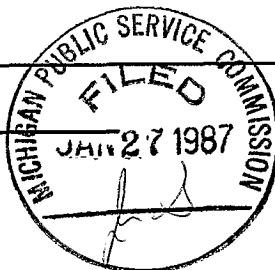
8. Customer Information and Service.

A. Each utility shall do all of the following:

- (1) Maintain up-to-date maps, plans, or records of the utility's entire transmission and distribution systems and 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 the utility's service area.
- (2) Assist the customer or prospective customer in selecting the most economical rate schedule based on the information supplied by the customers. However, the selection of the best available rate is the responsibility of the customer. Once the selection is made, the customer shall stay on the rate not less than twelve (12) months, or until he or she notifies the utility of changes in the conditions of his or her service which would warrant a different rate schedule.
- (3) Notify customers affected by a proposed change in rates or schedule classification, by publishing a notice in newspapers of general circulation in the utility's service area, individually or as otherwise required by the Commission.
- (4) Post a notice in a conspicuous place in each office of the utility where applications for service are received, which informs the public that copies of the rate schedules and rules relating to the service of the utility, as filed with the Commission, are available for inspection.
- (5) Upon request, inform the utility's customers as to the method of reading meters.
- (6) Furnish such additional information as the customer may reasonably request.

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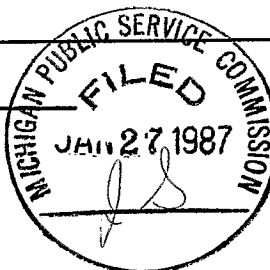
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STANDARD RULES AND REGULATIONS**9. Customer Records; Retention Period; Content.**

- A. The utility shall retain records as is necessary to effectuate compliance with Rule 10 and Rule 11 beginning on Sheet No. 63, but the records shall be retained for not less than three (3) years.
- B. Records for customers shall show, if applicable, all of the following information:
- (1) Kilowatt-hour meter reading.
 - (2) Kilowatt-hour consumption.
 - (3) Kilowatt, kilovoltampere, and kilovar meter reading.
 - (4) Kilowatt, kilovoltampere, and kilovar measured demand.
 - (5) Kilowatt, kilovoltampere, and horsepower billing demand.
 - (6) Total amount of bill.

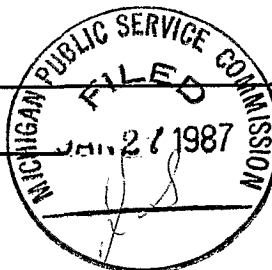
10. Metering Errors.

- A. If a meter creeps, if a metering installation is found upon any test to have an average error of more than 2.0%, if a demand metering installation is found upon any test to have an average error of more than 1.0% in addition to the errors allowed under Rule 31 beginning on Sheet Number 76, or if a meter registration has been found to be in error due to apparent tampering by persons known or unknown, an adjustment of bills for service for the period of inaccuracy shall be made in the case of over-registration and may be made in the case of under-registration.
- B. The amount of the adjustment shall be calculated on the basis that the metering equipment should be 100% accurate with respect to the testing equipment used to make the test. For single-phase watthour meters, the average accuracy shall be the arithmetic average of the percent registration at light load and at heavy load, giving the heavy load registration a weight of 4 and the light load registration a weight of 1. For polyphase meters, the average accuracy shall be the arithmetic average of the percent registration at light load given a weight of 1, and at heavy load and 100% power factor given a weight of 4, and at heavy load and 50% lagging power factor given a weight of 2.

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- C. If the date when the error in registration began can be determined, such date shall be the starting point for determination of the amount of the adjustment and shall be subject to Rule 11 C. beginning on Sheet Number 64.
- D. If the date when the error in registration began cannot be determined, it shall be assumed that the error has existed for a period equal to $\frac{1}{2}$ of the time elapsed since the meter was installed or $\frac{1}{2}$ of the time elapsed since the last test, whichever is later, except as otherwise provided in subrule F. of this rule and subject to Rule 11 C. beginning on Sheet Number 64.
- E. Recalculation of bills shall be on the basis of the corrected monthly consumption.
- F. The error in registration due to creep shall be calculated by timing the rate of creeping and by assuming that this creeping affected the registration of the meter for 25.0% of the time since the meter was installed or since the last test, whichever is later.
- G. If the average error cannot be determined by test because of failure of part or all of the metering equipment, it is permissible to use the registration of check metering installation, if any, or to estimate the quantity of energy consumed based on available data. The customer shall be advised of the failure and of the basis for the estimate of the quantity billed. The same periods of error shall be used as explained in this rule.
- H. If the recalculated bills indicate that more than \$1.00 is due an existing customer or that \$2.00 is due a person who is no longer a customer of the utility, the full amount of the calculated difference between the amount paid and the recalculated amount shall be refunded.



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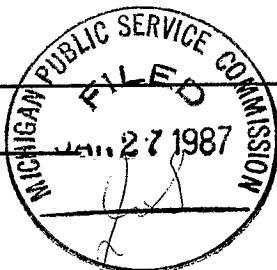
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- I. Refunds shall be made to the two (2) most recent consumers who received service through the meter found to be in error. In the case of a previous consumer who is no longer a customer of the utility, a notice of the amount due shall be mailed to such previous consumer at his or her last known address, and the utility shall, upon demand made within three (3) months thereafter, refund the same.
- J. If the recalculation of billing indicates that an amount due the utility is equal to or more than the amounts set forth in subrule H of this rule as minimum refunds, the utility may bill the customer for the amount due, subject to subrule L of this rule.
- K. Each utility may establish a policy whereby the minimum sum above which it will commence billing for amounts due to under-registration is more than the amounts set forth in subrule H of this rule as minimum refunds. The minimum sum established in the utility policy shall be applied in all cases of under-registration to determine whether the customer will be billed for the amount due the utility because of under-registration.
- L. Except in cases of tampering, the following limitation shall apply to the backbilling of residential, commercial, and industrial customers:
- (1) Backbilling of residential customers and commercial customers with single-phase 240 volt meters is limited to the 1-year period immediately preceding the discovery of the error. The customer shall be given a reasonable time in which to pay the amount of backbilling and service shall not be disconnected during this time for non-payment of the amount of backbilling.
 - (2) Backbilling of commercial and industrial customers not including subdivision (1) of this subrule is limited to the 1-year period immediately preceding discovery of the error, except in instances where the utility has complied with the requirements set forth in the section entitled "Metering Equipment Inspections and Tests", rules 23 through 40, beginning on Sheet No. 72 governing the frequency and conditions under which a meter shall be tested and the

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utility could not have detected the error through regular meter readings or the exercise of reasonable diligence in preparing and reviewing a customer's bills and records. In these instances, the utility may backbill a customer for a period of up to 3 years immediately preceding discovery of the error. The customer shall be given a reasonable time in which to pay the amount of the back-billing and service shall not be discontinued during this time for nonpayment of the amount of backbilling.

11. Billing Errors

- A. If a customer has been overcharged as a result of incorrect reading of the meter, incorrect use of meter constants, incorrect application of the rate schedule, incorrect connection of the meter, or other similar reasons, the amount of the overcharge shall be adjusted, refunded, or credited to the customer. A utility is not required to adjust, refund, or credit an overcharge beyond the 3-year period immediately preceding discovery of the billing error, unless the customer is able to present a record establishing an earlier date of occurrence or commencement of the error.
- B. If a customer has been undercharged as a result of incorrect reading of the meter, incorrect use of meter constants, incorrect application of the rate schedule, incorrect connection of the meter, or other similar reasons, the undercharge may be billed to the customer subject to subrule C of this rule.
- C. Except in cases of tampering, the following limitations shall apply to the backbilling of residential, commercial, or industrial customers:
- (1) Backbilling of residential and commercial customers with single-phase 240 volt meters is limited to the 1-year period immediately preceding the discovery of the error. The customer shall be given a reasonable time in which to pay the amount of the backbilling and service shall not be discontinued during this time for nonpayment of the amount of the backbilling.

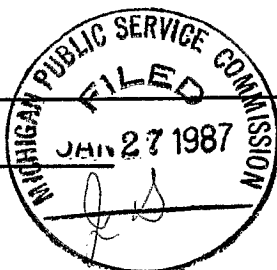
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(2) Backbilling of commercial and industrial customers not included in subdivision (1) of this subrule is limited to the 1-year period immediately preceding discovery of the error, except in instances where the utility could not have detected the error through regular meter readings or the exercise of reasonable diligence in the reviewing of a customer's bills and records. In these instances, the utility may backbill a customer for a period of up to 3 years immediately preceding discovery of the error. The customer shall be given a reasonable time in which to pay the amount of the back-billing and service shall not be discontinued during this time for nonpayment of the amount of the backbilling.



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12. Estimated Demand Billing.

Upon request of the customer, and if the customer's demand is normally estimated for billing purposes, the utility shall measure the demand during the customer's normal operation and shall use the measured demand for billing.

13. Servicing Utilization Control Equipment Used on the Customer's Premises.

Each utility shall service and maintain its equipment used 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.

14. Customer Complaints; Investigations; Records.

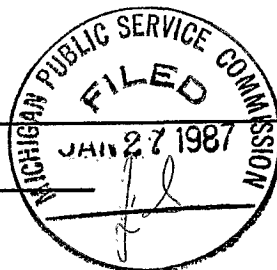
Complaints concerning the charges, practices, facilities, or service of the utility shall be investigated promptly and thoroughly. The utility shall keep records of customer complaints that will enable the utility to review and analyze its procedures and actions.

15. Temporary Service; Cost of Installing and Removing Facilities.

If the utility renders temporary service to a customer, it shall require that the customer bear the cost of installing and removing the facilities in excess of any salvage realized.

16. Protection of Utility's Facilities on Customer's Premises.

The customer shall use reasonable diligence to protect the utility's facilities located on the customer's premises and to prevent tampering



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or interference with such facilities. The utility may discontinue service in accordance with any applicable rules of the Michigan Public Service Commission, where the metering or wiring on the customer's premises has been tampered with or altered in any manner to allow unmetered or improperly metered energy to be used. If a utility discontinued service for unauthorized use of service, the utility is not required to restore service until the customer has made reasonable arrangements for payment of the unmetered energy used, agreed to pay the approved reconnection charges, and agreed to make provisions and pay charges for an outdoor meter installation or other metering changes as may be requested by the utility. Failure to comply with the terms of such an agreement shall be cause to discontinue service in accordance with applicable rules of the utility or commission. Restoration of services may also be contingent upon receipt of reasonable assurance of the customer's compliance with the utility's approved standard rules and regulations.

17. Extension of Facilities Plan.

Each utility shall develop a plan, acceptable to the Commission, for the extensions of facilities, where the investment is in excess of that included in the regular rates for service and for which the customer is required to pay all or part of the cost.

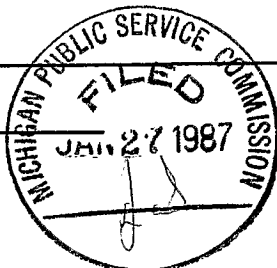
18. Extension of Electric Service in Areas Served by Two or More Utilities.

A. As used in this rule:

- (1) "Customer" means the buildings and facilities served rather than the individual, association, partnership, or corporation taking service.
- (2) "Distances" means measurements which are determined by direct measurement from the closest point of a utility's existing distribution facilities to the customer's meter location and which are not determined by the circuit feet involved in any extension.

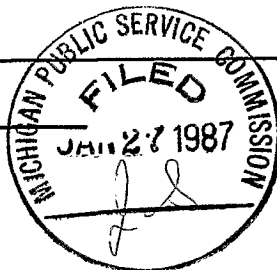
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- (3) "Distribution facilities" means both single-phase, V-phase, and three-phase facilities and does not include service drops.
- (4) "Premises" means any undivided piece of land which is not separated by public roads, streets, or alleys.
- (5) "Utility" means both a private utility and a rural electric cooperative.
- B. Existing customers shall not transfer from one utility to another.
- C. Prospective customers for single-phase service who are located within 300 feet of the distribution facilities of two (2) or more utilities shall have the service of their choice.
- D. Prospective customers for single-phase service who are located more than 300 feet, but within 2,640 feet, from the distribution facilities of one (1) or more utilities shall be served by the closest utility.
- E. Prospective customers for single-phase service who are located more than 2,640 feet from the distribution facilities of any utility shall have the service of their choice, subject to the provisions of subrule J of this rule.
- F. Prospective customers for three-phase service who are located within 300 feet of the three-phase distribution facilities of two (2) or more utilities shall have the service of their choice.
- G. Prospective customers for three-phase service who are located more than 300 feet, but within 2,640 feet, from the three-phase distribution facilities of one (1) or more utilities shall be served by the closest utility.
- H. Prospective customers for three-phase service who are located more than 2,640 feet from the three-phase distribution facilities of any utility shall have the service of their choice, subject to the provisions of subrule J of this rule.

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- I. Regardless of any other provisions in these rules, a prospective industrial customer, as defined under the industrial classification manual, division D, manufacturing, for three-phase service that will have a connected load of more than 500 kilowatts shall have its choice of service from any nearby utility that is willing to construct the necessary facilities. The facilities that are constructed to serve an industrial customer that would otherwise have been served by another utility shall not qualify as a measuring point in determining who will serve new customers in the future.

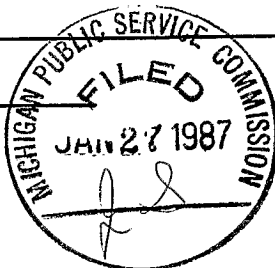
- J. The extension of distribution facilities, except as provided in subrules C, D, F and G of this rule, where such extension will be located within one (1) mile of another utility's distribution facilities, shall not be made by a utility without first giving the Commission and any affected utility ten (10) days' notice of its intention, by filing a map showing the location of the proposed new distribution facilities, the location of the prospective customers, and the location of the facilities of any other utility in the area. If no objections to the proposed extension of distribution facilities are received within the ten (10) day notice period by the Commission, the utility may proceed to construct the facilities. If objections are received, the determination of who will extend service may be made the subject of a public hearing and a determination by the Commission upon proper application by any affected party.

- K. The first utility serving a customer pursuant to these rules is entitled to serve the entire electric load on the premises of that customer even though another utility is closer to a portion of the customer's load.

- L. A utility may waive its rights to serve a customer or group of customers if another utility is willing and able to provide the required service and if the Commission is notified and has no objections.

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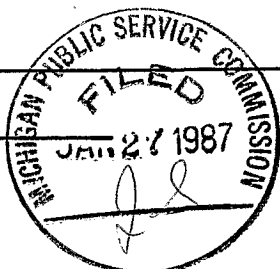
- M. Nothing contained in this rule prohibits a utility or a customer from applying to the Commission for relief from the operation of these rules, or prevents the Commission from granting such relief if it finds such action to be in the public interest.
- N. Nothing contained in these rules shall be construed to circumvent the requirements of Act No. 69 of the Public Acts of 1929, being paragraph 460.501 et. seq. of the Michigan Compiled Laws, or to authorize a utility to extend its service into a municipality then being served by another utility, without complying with the provisions of Act No. 69 of the Public Acts of 1929.
- O. Regardless of other provisions of this rule, except subrule I, a utility shall not extend service to a new customer in a manner that will duplicate the existing electric distribution facilities of another utility, except where both utilities are within 300 feet of the prospective customer. Three-phase service does not duplicate single-phase service when extended to serve a three-phase customer.
- P. The first utility to serve a customer in a new subdivision under the other provisions of this rule has the right to serve the entire subdivision. In extending service to reach the subdivision, the utility shall not duplicate the existing facilities of another utility.

Engineering

19. Electric Plant; Construction, Installation, Maintenance, and Operation Pursuant to Good Engineering Practice Required.

The electric plant of the utility shall be constructed, installed, maintained, and operated pursuant to 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.

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STANDARD RULES AND REGULATIONS**20. Standards of Good Practice; Adoption by Reference.**

A. In the absence of specific rules of the Commission, a utility shall apply the provisions provided in the following publications, which are adopted by reference, as standards of accepted good practice:

- (1) National Electrical Safety Code, 1981 Edition (ANSI-C-2), parts 1, 2, 3, and section 9, available from the Michigan Public Service Commission, P.O. Box 30221, Lansing, Michigan 48909 at cost of reproduction, or from Standards Department, The Institute of Electrical and Electronics Engineers, 345 East 47th Street, New York, NY 10017, at a cost of \$9.75.
- (2) American National standard code for electric meters (ANSI-C-12), 1975 Edition, available from the Michigan Public Service Commission at cost of reproduction, or from American National Standards Institute, 1430 Broadway, New York, NY 10018, at a cost of \$12.75.
- (3) American National standard requirements, terminology and test code for instrument transformers (ANSI-C-57.12.80), 1978 Edition, available from the Michigan Public Service Commission at cost of reproduction, or from American National Standards Institute, 1430 Broadway, New York, NY 10018, at a cost of \$6.00.

21. Utility Plant Generating Capacity.

The generating capacity of the utility's plant, supplemented by the electric power regularly available from other sources, should be large enough to meet all normal demands for service and to provide a reasonable reserve for emergencies.

22. Electric Plant Inspection Program.

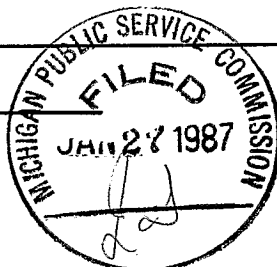
Each utility shall adopt a program of inspection of its electric plant to determine the necessity for replacement and repair. The frequency of the various inspections shall be based on the utility's experience and accepted good practice. Each utility shall keep sufficient records to give evidence of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

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Metering Equipment Inspections and Tests

23. Customer-Requested Meter Tests.

- A. Upon request by a customer to a utility, a utility shall make a test of the meter serving the customer. Any charge to the customer shall conform with the utility's filed and approved rates and rules, provided however, that the utility need not make more than one test in any twelve (12) month period.
- B. The customer, or his or her representative, may be present when his or her meter is tested.
- C. A report of the results of the test shall be made to the customer within a reasonable time after the completion of the test, and a record of the report, together with a complete record of each test, shall be kept on file at the office of the utility.

24. Meter and Associated Device Inspections and Tests; Certification of Accuracy.

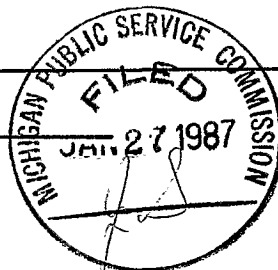
Every meter and associated device shall be inspected and tested in the meter shop of the utility before being placed in service. The accuracy of each meter shall be certified to be within the tolerances permitted by these rules, except that the utility may rely on the certification of accuracy by the manufacturer on all new self-contained, single-phase meters.

25. Meters with Transformers; Post-Installation Inspection; Exception.

Meters with associated instrument transformers and phase shifting transformers shall be inspected to determine the proper operation and wiring connections. Inspections shall be made within 60 days after installation by a qualified person who, when possible, should be someone other than the original installer. All self-contained, socket-type meters are excluded from post-installation inspections, except that the original installation shall be inspected when the meter is installed.

26. Meters and Associated Devices; Retirement Tests.

All meters and associated devices shall be tested after they are retired from service.

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27. Metering Electrical Quantities.

- A. All electrical quantities that are to be metered as provided in Rule 1, Sheet Number 58 shall be metered by commercially acceptable instruments which are owned and maintained by the utility.
- B. Every reasonable effort shall be made to measure at one point all the electrical quantities necessary for billing a customer under a given rate.
- C. Metering facilities located at any point where energy may flow in either direction and where the quantities measured are used for billing purposes shall consist of meters equipped with ratchets or other devices to prevent reverse registration and shall be so connected as to separately meter the energy flow in each direction.
- D. Reactive metering shall not be employed for determining the average power factor for billing purposes where energy may flow in either direction or where the customer may generate an appreciable amount of his or her energy requirements at any time, unless suitable directional relays and ratchets are installed to obtain correct registration under all conditions of operation.
- E. All electric service of the same type rendered under the same rate schedule shall be metered with instruments having like characteristics, except that the Commission may be requested to approve the use of instruments of different types if their use does not result in unreasonable discrimination. Either all of the reactive meters which may run backwards or none of the reactive meters used for measuring reactive power under one schedule shall be ratcheted.



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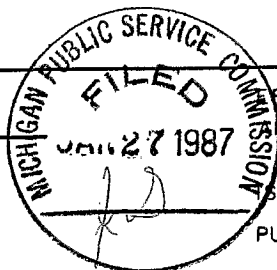
28. Nondirect Reading Meters and Meters Operating from Instrument Transformers; Marking of Multiplier on Instruments; Marking of Charts and Magnetic Tapes; Marking of Register Ratio on Meter Registers; Watthour Constants.

- A. Meters that are not direct reading and meters operating from instrument transformers shall have the multiplier plainly marked on the dial of the instrument or otherwise suitably marked. All charts and magnetic tapes taken from recording meters shall be marked with the date of the record, the meter number, customer, and chart multiplier, except as provided in Rule 4, Sheet Number 59.
- B. The register ratio shall be marked on all meter registers.
- C. The watthour constant for the meter itself shall be shown on all watthour meters.

29. Watthour Meter Requirements.

- A. Watthour meters that are used for measuring electrical quantities supplied shall meet all of the following requirements:
 - (1) Be of proper design for the circuit on which the meters are used; be in good mechanical and electrical condition; and have adequate insulation, correct internal connections, and correct register.
 - (2) Not creep at no load with all load wires disconnected at a rate of one (1) complete revolution of the moving element in ten (10) minutes when potential is impressed.
 - (3) Be accurate to within plus or minus 1.0%, referred to the portable standard watthour meter as a base, at 2 unity power factor loads; light load (l.l.) and heavy load (h.l.). Light load test current for self-contained meters is equal to 10% of the rated test amperes of the meter. Heavy load test current for self-contained meters is between 75% and 100% of the rated test amperes of the meter.

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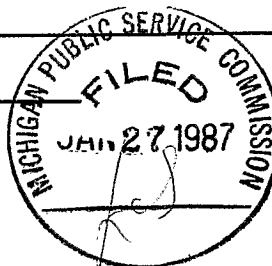
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Heavy load test current for transformer rated meters is between 75% and 200% of the rated test amperes of the meter. Light load test current for transformer rated meters is between 5% and 10% of the rated test amperes of the meter.

- (4) Be accurate to within plus or minus 2.0% referred to the portable standard watthour meter as a base, at inductive load (i.1.), approximately 50% lagging power factor. Inductive load test current is approximately equal to heavy load test current.
- B. Polyphase meters shall have their elements in balance within 2.0% at rated test amperes at unity power factor and at approximately 50% lagging power factor.
- C. Meters that are used with instrument transformers shall be adjusted so that the overall accuracy of the metering installation meets the requirements of this rule.
- D. Meters and associated devices shall be adjusted as close as practical to zero error and within the accuracy limits specified in subrule A. (3) of this rule.
30. Demand Meters, Registers, and Attachments; Requirements.
- A. A demand meter, demand register, or demand attachment that is used to measure a customer's service shall meet all of the following requirements:
- (1) Be in good mechanical and electrical condition.
 - (2) Have proper constants, indicating scale, contact device, recording tape or chart, and resetting device.
 - (3) Not register at no load.

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(4) Be accurate to the following degrees:

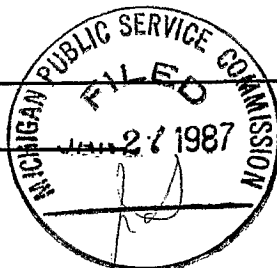
- (a) Curve-drawing meters that record quantity-time curves and integrated-demand meters shall be accurate to within plus or minus 2.0% of full scale throughout their working range. Timing elements measuring specific demand intervals shall be accurate to within plus or minus 2.0%, and the timing element which serves to provide a record of the time of day when the demand occurs shall be accurate to within plus or minus 4 minutes in 24 hours.
- (b) Lagged-demand meters shall be accurate to within plus or minus 4.0% of full scale at final indication.

31. Instrument Transformers Used in Conjunction with Metering Equipment; Requirements; Phase Shifting Transformers; Secondary Voltage.

A. Instrument transformers used in conjunction with metering equipment to measure a customer's service shall meet both the following requirements:

- (1) Be in proper mechanical condition and have satisfactory electrical insulation for the service on which used.
- (2) Have characteristics such that the combined inaccuracies of all transformers supplying one (1) or more meters in a given installation will not exceed the percentages listed in the following chart:

<u>100% Power Factor</u>		<u>50% Power Factor</u>	
<u>10%</u>	<u>100%</u>	<u>10%</u>	<u>100%</u>
<u>Current</u>	<u>Current</u>	<u>Current</u>	<u>Current</u>
1%	.75%	3%	2%



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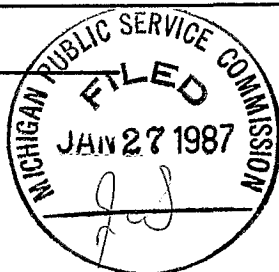
- B. Meters that are used in conjunction with instrument transformers shall be adjusted so that the overall accuracies will come within the limits specified in this part.
- C. Instrument transformers shall be tested with the meter with which they are associated by making an overall test or may be checked separately. If the transformers are tested separately, the meters shall also be checked to see that the overall accuracy of the installation is within the prescribed accuracy requirements. See Rule 35, Paragraph F., Sheet Number 86.
- D. The results of tests of instrument transformers shall be kept on record and shall be available for use.
- E. Phase shifting transformers shall have secondary voltages under balanced line voltage conditions within plus or minus 1.0% of the voltage impressed on the primary side of the transformer.

32. Portable Indicating Voltmeters; Accuracy.

All portable indicating voltmeters that are used for determining the quality of service voltage to customers shall be checked against a suitable secondary reference standard at least once every six (6) months. The accuracy of these voltmeters shall be rated so that the error of the indication is not more than plus or minus 1% of full scale. If the portable indicating voltmeter is found to be in error by more than the rated accuracy at commonly used scale deflections, it shall be adjusted.

33. Meter Testing Equipment; Availability; Provision and Use of Primary Standards.

- A. The utility shall maintain sufficient laboratories, meter testing shops, secondary standards, instruments, and facilities to determine the accuracy of all types of meters and measuring devices used by the utility. The utility may, if necessary, have all or part of the required

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tests made or its portable testing equipment checked by another utility or agency approved by the Commission and having adequate and sufficient testing equipment to comply with these rules.

B. At a minimum, a utility shall keep all of the following testing equipment available:

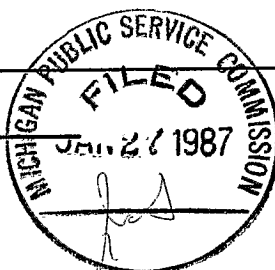
- (1) One or more portable standard watthour meters of a capacity and voltage range adequate to test all watthour meters used by the utility.
- (2) Portable indicating instruments that are necessary to determine the accuracy of all instruments used by the utility.
- (3) One or more secondary standards to check each of the various types of portable standard watthour meters used for testing watthour meters. Each secondary standard shall consist of an approved portable standard watthour meter kept permanently at one point and not used for fieldwork. Standards shall be well compensated for both classes of temperature errors, shall be practically free from errors due to ordinary voltage variations, and shall be free from erratic registration due to any cause.
- (4) Suitable standards, which are not used for fieldwork, to check portable instruments used in testing.

C. A utility shall provide and use primary standards with accuracies traceable to the United States National Bureau of Standards.

34. Test Standards; Accuracy.

A. The accuracies of all primary reference standards shall be certified as traceable to the National Bureau of standards, either directly or through other recognized standards laboratories. These standards shall have their accuracy certified at the time of purchase.

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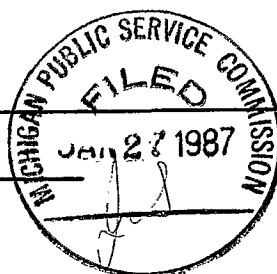
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Standard cells shall be intercompared regularly and shall have at least one of them checked by a standardizing laboratory at intervals of not more than two (2) years. Reference standards of resistance, potentiometers, and volt boxes shall be checked at intervals of not more than three (3) years.

- B. Secondary watt-hour meter standards shall not be in error by more than plus or minus 0.3% at loads and voltages at which they are to be used, and shall not be used to check or calibrate working standards, unless the secondary standard has been checked and adjusted, if necessary, within the preceding six (6) months. Each secondary watt-hour meter shall have calibration data available and shall have a history card.
- C. Secondary standards indicating instruments shall not be in error by more than plus or minus 0.5% of indication at commonly used scale deflection and shall not be used to check or calibrate portable indicating instruments, unless the secondary standard has been checked and adjusted, if necessary, within the preceding twelve (12) months. A calibration record shall be maintained for each standard.
- D. Regularly used working portable standard watt-hour meters shall be compared with a secondary standard at least once a month. Infrequently used working standards shall be compared with a secondary standard before they are used.
- E. Working portable standard watt-hour meters shall be adjusted so that their percent registration is within 99.7% and 100.3% at 100% power factor and within 99.5% and 100.5% at 50% lagging power factor at all voltages and loads at which the standard may be used. A history and calibration record shall be kept for each working standard.
- F. The meter accuracies required in this rule for all primary, secondary, and working standards shall be referred to 100%. Service measuring equipment shall be adjusted to within the accuracies required assuming the portable test equipment to be 100% accurate with the calibration correction taken into consideration.

ISSUED January 1, 1987EFFECTIVE FOR SERVICE RENDERED ON
AND AFTER January 1, 1987

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- A. The testing of any unit of metering equipment shall consist of a comparison of its accuracy with a standard of known accuracy. Units which are not properly connected or which do not meet the accuracy or other requirements of these meter and metering equipment rules at the time of testing shall be reconnected and rebuilt to meet such requirements, and shall be adjusted to within the required accuracy and as close to zero error as practicable or else their use shall be discontinued.
- B. Self-contained, single-phase meters, except combination meters (meters which include demand devices or control devices), shall meet all of the following requirements:

- (1) Be checked for accuracy at unity power factor at the point where a meter is installed, at a central testing point, or in a mobile testing laboratory within a period of from twelve (12) months before to sixty (60) days after a meter is placed in service, except as provided in Rule 24, Sheet Number 72, and not later than six (6) months after 192 months of service for a surge-resistant meter, and not later than six (6) months after 96 months of service for a non-surge-resistant meter.
- (2) Notwithstanding subdivision (1) of this subrule, in-service self-contained, single-phase and 3-wire network meters will be tested with the company's Wisconsin meters under a statistical sample test plan as specified in the following sections of the Wisconsin Administrative Code:

"PSC 113.518 Statistical sample testing plan for in-service self-contained, single-phase and 3-wire network meters."

- (a) "The statistical sample testing plan described in paragraphs (a)-(e) may be used for testing self-contained, single-phase and 3-wire network meters without demand or electronic registers or pulsing devices in place of the periodic testing requirements of s. PSC 114.51, if the commission authorizes the adoption of the plan by a utility."
- (b) "All extended range, surge-proof designed meters shall be divided into homogeneous groups based on meter design features and age. The groups shall be further divided into lot sizes categorized by manufacturer, type, serial number, group size or load duty cycle, with lot sizes containing a minimum of 301 meters and a maximum of 22,000 meters. The number of lots or lot composition and size may be changed at the end of the sample

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AND AFTER November 11, 1988ISSUED UNDER AUTHORITY OF THE MICHIGAN
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testing year to allow for increasing or decreasing analysis of accuracy testing requirements on any segment of meters in any lot."

- (c) "Annually, from each of the assembled lots, a coded sample, size specified in Table A-2, Inspection Level IV, page 4 of Military Standard 414, (MIL-STD-414), dated 11 June, 1957 and a corresponding actual sample, size as shown on Table B-3, page 45, (MIL-STD-414), shall be randomly selected for testing and analysis purposes. Each meter in the lot sample shall be provided with a full load and light load test for accuracy at unity power factor, as specified under s. PSC 113.40 (1)(c). A separate statistical analysis shall be performed on each lot sample at each of these two load ranges."

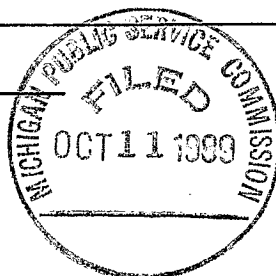
"In selecting meters to be included in the required sample, a limited number of meters found to be defective as defined below may be removed from the sample and replaced with the next meter in the same lot identified by the random selection process for that lot."

"Any meter found to be not registering (stopped) at either the full load or light load test point may be removed and replaced."

"Not more than two meters found to be registering less than 95 percent or more than 105 percent at either full load or light load test point may be removed and replaced."

"The number of defective meters removed under this rule from the initially selected sample for any test lot and nature of the defects shall be reported to the commission with the annual summary report required under s. PSC 113.23(4)."

- (d) "The statistical analysis calculations for both the full and light load accuracy results from the sample lot tests shall be made following the example outlined on page 43 of MIL-STD-414, with the upper and lower specification limits, U and L, designated at 102% and 98%, respectively. The test criterion for acceptance or rejection of each lot shall be by the Standard Deviation Method, Double Specification Limit, with an Acceptable Quantity Level (AQL) of 1.00 for the full load analysis and 4.00 for the light load analysis (both normal inspection) as shown on Table B-3, page 45 of MIL-STD-414."

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(e) A lot shall be deemed acceptable for continued use if the total estimated percent defective (P) is less than the appropriate maximum allowable percent defective (M), as determined from Table B-3, page 45 of MIL-STD-414, following the procedure of paragraph (c) for both the full load and light load analysis test points at the respective designated Acceptable Quality Levels. All of the meters in the accepted lot may be retained in use without further accuracy adjustments and will be concluded to have the accuracy characteristics specified in s. PSC 113.40(1)(c). Meters in the sample lot may be adjusted for acceptable accuracy as required or maintained as necessary and returned to the lot."

(f) "A lot shall be deemed unacceptable and rejected for continued use if the total estimated percent defective (P) is greater than the appropriate maximum allowable percent defective (M), as determined from Table B-3, page 45 MIL-STD-414, following the procedure of paragraph (c) for both the full load and light load analysis test points at the respective designated Acceptable Quality Levels on any two annual sample testing analysis years,

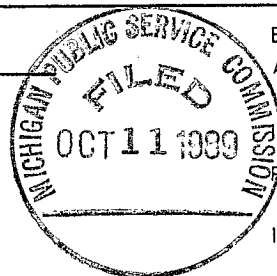
October 6, 1989

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AND AFTER September 27, 1989

ISSUED

BY: E. M. THEISEN
PRESIDENT

EAU CLAIRE, WISCONSIN



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for the lot or any meters in the lot. All meters in a rejected lot shall be provided with an appropriate test within a period of 48 months from the date of completion of the sample analysis, and all the meters tested in the rejected lot shall be adjusted to the accuracies specified in s. PSC 113.40(1)(c). Annual statistical sample testing shall be terminated during the period when all of the meters in a rejected lot are being provided with a test and accuracy adjustment."

(g) "All meters in any lot may be tested and adjusted for proper accuracy over a 48-month period at the discretion of the utility, without a sample analysis determination specifying the lot test is necessary."

(3) "PSC 113.40 (1)(c) Accuracy of Watthour Meters"

"Watthour meters used for measuring electrical quantities supplied to customers shall:

"If they are designed for use on alternating current circuits, be accurate to within plus or minus 1.0% at 2 unity power factor loads, one equal to approximately 10% and the other approximately 100% (plus or minus 10%) of the reference test current; and shall register correctly within 2.0% plus or minus at a power factor of approximately 50% lagging and at a load between 75% and 100% of the reference test current of the meter. For self-contained meters the reference test current shall be the ampere or test ampere rating of the meter, whichever is shown on the nameplate. For meters used with current transformers, the reference test current shall be the test-ampere rating of the meter or the secondary rating of the current transformers."

(4) "PSC 113.23 Metering Equipment Records"

"Each utility authorized to test meters under the statistical sample testing plan of s. PSC 113.518 shall submit to the commission by April 15 of the following year, a summary of the statistical sample testing results for the prior calendar year. The summary shall include group and lot numbers; a description of meters in each lot; the number of meters in each lot; the number of meters sample-tested in each lot--NSPW represents that it will specifically report and identify the test results with respect to Michigan meters; full load sample mean accuracy (x), estimated standard deviation(s) and total estimated percent defective (P); light load sample mean accuracy (x), estimated standard deviation(s) and total estimated percent defective (P);

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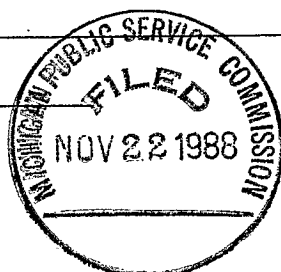
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projected annual rates of change for x, s and P at both full and light load analysis points; lots requiring testing and actual x, s and P data from meters where entire lot tests were required under the program; group and lot numbers; a description of meters in each lot and the number of meters in each lot for the succeeding test year."

- (5) The sample meter testing plan described in subdivision (2)(a)-(g) does not alter the rules under which customers may request special tests of meters.
- (6) Be checked for accuracy in all of the following situations:
- (a) When a meter is suspected of being inaccurate or damaged.
 - (b) When the accuracy of a meter is questioned by a customer. See Rule 23, Sheet Number 72.
 - (c) Before use if a meter has been inactive for more than one (1) year after having been in service.
 - (d) When a meter has been removed from service and has not been tested within the previous 48 months.
- (7) Be inspected for mechanical and electrical faults when the accuracy of the device is checked.
- (8) Have the register and the internal connections checked before the meter is first placed in service and when the meter is repaired.
- (9) Have the connections to the customer's circuits checked when the meter is tested on the premises or when removed for testing.
- (10) Be checked for accuracy at 50% power factor when purchased and after rebuilding.
- (11) A meter need not be tested or checked for any reason, except on complaint, if the device was tested, checked, and adjusted if necessary, within the previous twelve (12) months.
- C. All single-phase meters that are not included in subrule B of this rule, together with associated equipment such as demand devices, control devices, and instrument transformer rated meters, shall meet all of the following requirements:

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- (1) Be checked for accuracy at unity power factor at the point where a meter is installed, at a central testing point, or in a mobile testing laboratory as follows:
- (a) Within a period of twelve (12) months before to sixty (60) days after a meter is placed in service, except as provided for in Rule 24, Sheet Number 72.
 - (b) Not later than six (6) months after 144 months of service for a surge-proof meter and not later than six (6) months after 96 months of service for a nonsurge-proof meter.
 - (c) When a meter is suspected of being inaccurate or damaged.
 - (d) When the accuracy of a meter is questioned by a customer. See Rule 23, Sheet Number 72.
 - (e) Before use when a meter has been inactive for more than one (1) year after having been in service.
 - (f) When a meter is removed from service and has not been tested within a period equal to $\frac{1}{2}$ of the normal test schedule.
- (2) Be inspected for mechanical and electrical faults when the accuracy of the device is checked.
- (3) Have the register and the internal connections checked before the meter is first placed in service and when the meter is repaired.
- (4) Have the connections to the customer's circuits checked when the meter is tested on the premises or when removed for testing.
- (5) Be checked for accuracy at 50% power factor when purchased and after rebuilding.
- (6) A meter need not be tested or checked for any reason, except on complaint, if the device was tested, checked, and adjusted if necessary, within the previous twelve (12) months.
- D: All self-contained, three-phase meters and associated equipment shall meet all of the following requirements:
- (1) Be tested for accuracy at unity and 50% power factor as follows:
 - (a) Before being placed in service.

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- (b) Not later than six (6) months after 120 months of service.
 - (c) When a meter is suspected of being inaccurate or damaged.
 - (d) When the accuracy of a meter is questioned by a customer. See Rule 23, Sheet Number 72.
 - (e) When a meter is removed from service.
- (2) Be inspected for mechanical and electrical faults when the accuracy is checked.
- (3) Have the register and internal connections checked before the meter is first installed, when repaired, and when the register is changed.
- (4) Have the connections to the customer's circuits and multipliers checked when the equipment is tested for accuracy on the customer's premises.
- E. All transformer-rated, three-phase meters and associated equipment shall meet all of the following requirements:
- (1) Be checked for accuracy at unity and 50% power factor as follows:
 - (a) Before being placed in service.
 - (b) On the customer's premises within 60 days after installation, unless the transformers conform with the specifications outlined in the American National Standards Institute standard ANSI C-57.13 of 1980, which is adopted by reference and is available from the Michigan Public Service Commission, P.O. Box 30221, Lansing, Michigan 48909 at cost of reproduction, or from American National Standards Institute, 1430 Broadway, New York, N.Y. 10018, at a cost of \$7.50, and are of the 0.3 accuracy class, and unless the meter adjustment limits do not exceed plus or minus 1.5% at 50% power factor.
 - (c) Not later than six (6) months after 48 months of service.
 - (d) When a meter is suspected of being inaccurate or damaged.
 - (e) When the accuracy is questioned by a customer. See Rule 23, Sheet Number 72.
 - (f) When a meter is removed from service.

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- (2) Be inspected for mechanical and electrical faults when the accuracy is checked.
 - (3) Have the register and internal connections checked before the meter is first placed in service and when the meter is repaired.
 - (4) Have the connections to the customer's circuits and multipliers checked when the equipment is tested for accuracy on the premises or when removed for testing and when instrument transformers are changed.
 - (5) Be checked for accuracy at 50% power factor when purchased and after rebuilding.
- F. Instrument transformers shall be tested in all of the following situations:
- (1) When first received, unless a transformer is accompanied by a certified test report by the manufacturer.
 - (2) When removed from service.
 - (3) Upon complaint.
 - (4) When there is evidence of damage.
 - (5) When an approved check, such as the variable burden method in the case of current transformers made when the meter is tested, indicates that a quantitative test is required.
- G. Demand meters shall meet both of the following requirements:
- (1) Be tested for accuracy in all of the following situations:
 - (a) Before a meter is placed in service.
 - (b) When an associated meter is tested and the demand meter is a block interval nonrecording type or a thermal type.
 - (c) After two (2) years of service if the meter is of the recording type, but it is not required if the meter is of the pulse-operating type and the demand reading is checked with the kilowatt-hour reading each billing cycle.
 - (d) When a meter is suspected of being inaccurate or damaged.

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(e) When the accuracy is questioned by a customer. See Rule 23, Sheet Number 72.

(f) When a meter is removed from service.

(2) Be inspected for mechanical and electrical faults when a meter is tested in the field or in the meter shop.

H. Military standard 414, June 11, 1957 is hereby adopted by reference and is available from the Michigan Public Service Commission, P. O. Box 30221, Lansing, Michigan 48909 at cost of reproduction, or from the Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, Pennsylvania 19120 without charge.

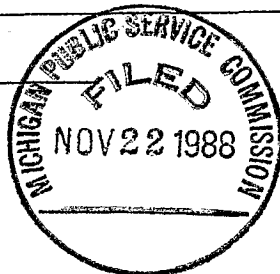
36. Standards Check by the Commission.

A. Upon request of the Commission, a utility shall submit one of its portable standard watt-hour meters and one portable indicating voltmeter, ammeter, and wattmeter to a commission-approved standards laboratory for checking of their accuracy.

B. A utility shall normally check its own working portable standard watt-hour meters or instruments against primary or secondary standards and shall calibrate these working standards or instruments before they are submitted, with a record of such calibration attached to each of the working standards or instruments.

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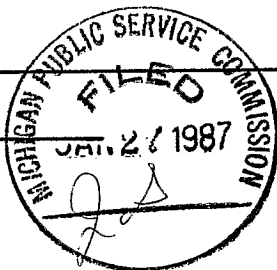
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STANDARD RULES AND REGULATIONS**37. Metering Equipment Records.**

- A. A complete record of the most recent test of all metering equipment shall be maintained. The record shall show all of the following information.
- (1) Identification and location of unit.
 - (2) Equipment with which the device is associated.
 - (3) The date of test.
 - (4) Reason for the test.
 - (5) Readings before and after the test.
 - (6) A statement as to whether or not the meter creeps and, in case of creeping, the rate.
 - (7) A statement of meter accuracies before and after adjustment sufficiently complete to permit checking of the calculations employed.
 - (8) Indications showing that all required checks have been made.
 - (9) A statement of repairs made, if any.
 - (10) Identification of the testing standard and the person making the test.
- B. The utility shall also keep a record of each unit of metering equipment which shows all of the following information:
- (1) When the unit was purchased.
 - (2) The unit's cost.
 - (3) The company's identification.

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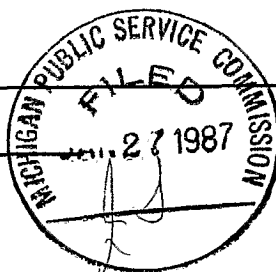
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- (4) Associated equipment.
- (5) Essential nameplate date.
- (6) The date of the last test.

The record shall also show either the present service location with the date of installation or, if removed from service, the service location from which the unit was removed with the date of removal.

38. Average Meter Error; Determination.

- A. If a metering installation is found upon any test to be in error by more than 2% at any test load, the average error shall be determined in one of the following ways:
 - (1) If the metering installation is used to measure a load which has practically constant characteristics, such as street lighting load, the meter shall be tested under similar conditions of load and the accuracy of the meter "as found" shall be considered as the average accuracy.
 - (2) If a single-phase metering installation is used on a varying load, the average error shall be the weighted algebraic average of the error at light load and the error at heavy load, the latter being given a weighting of four times the former.
 - (3) If a polyphase metering installation is used on a varying load, the average error shall be the weighted algebraic average of its error at light load given a weighting of one, its error at heavy load and 100% power factor given a weighting of four, and at heavy load and 50% lagging power factor given a weighting of two.
 - (4) If a load, other than the light, heavy, and low power factor load specified for routine testing, is more representative of the

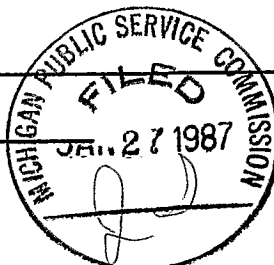
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customary use of the metering equipment, its error at that load shall also be determined. In this case, the average error shall be computed by giving the error at such load and power factor a weighting of three, and each of the errors at the other loads (light, heavy, and 50% lagging power factor) a weighting of one. Each error shall be assigned its proper sign.

39. Reports to be Filed with the Commission.

- A. A utility shall file with the Commission, within thirty (30) days after the first day of January of each year, a statement certified to by one of its officers that the utility has complied with all of the requirements set forth in these rules relating to meter standardizing equipment.
- B. For all meters that are not included in Rule 35 B. (2), Sheet Numbers 80 through 82, the utility shall file with the Commission, on or before the first day of April of each year, its annual tabulation of all its prior-to-adjustment meter test results covering the twelve (12) month period ending December 31. The utility shall summarize by meter type all individual meters and overall light and heavy load prior-to-adjustment test results at the power factors as required by these rules. The summary shall be divided into heavy load 100% power factor, light load 100% power factor, and heavy load 50% power factor test results and shall also be divided according to the length of meter test period and types of single-phase and polyphase meters. The summary shall show the number of meters or overall tests found within each of the following accuracy classifications:
- (1) No recording.
 - (2) Creeping.
 - (3) Equal to or less than 94.0%.
 - (4) 94.1 to 96.0%.

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- (5) 96.1 to 97.0%.
- (6) 97.1 to 98.0%.
- (7) 98.1 to 99.0%.
- (8) 99.1 to 100.0%.
- (9) 100.1 to 101.0%.
- (10) 101.1 to 102.0%.
- (11) 102.1 to 103.0%.
- (12) 103.1 to 104.0%.
- (13) 104.1 to 106.0%.
- (14) Over 106.0%.

When a utility is subject to multiple state jurisdiction, these accuracy classifications may be modified upon approval of the Commission.

C. For all meters that are included in Rule 35 B. (2), Sheet Numbers 80 through 82, the utility shall file with the Commission, on or before the first day of April, all of the following:

- (1) A summary of all samples of meter lots that pass the acceptability criterion as set forth in military standard 414, including complete data on the type of meter, number of meters in lot, size of sample, average months in service since last test, and the computed p (total estimated percent defective in lot) and the corresponding M (maximum allowance percent defective) as determined from table B-3 in military standard 414, June 11, 1957.

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- (2) The necessary calculations made pursuant to the illustrations on page 43 of military standard 414 shall be retained for each sample drawn. In addition to the actual computation, the data should include the type of meter, number of meters in lot, meter numbers of sample meters, actual prior-to-adjustment test data of each meter tested, and months since last test for each meter in sample. A sample of the aforementioned calculations and data for a lot that passes the acceptability criterion shall be included in the report to the Commission.
- (3) A copy of the complete data as outlined in subdivision C. of this subrule shall be included for each meter lot that fails to pass the acceptability criterion as set forth in military standard 414.
- (4) A report summarizing the testing of all meters in rejected lots. The heavy load preadjustment tests only shall be recorded and the accuracy classifications as established in subrule B. of this rule shall be used. Each rejected lot shall be reported separately and shall be separated into groups by the number of months since the last test as follows:
- (a) 0 to 48 months.
 - (b) 49 to 72 months.
 - (c) 73 to 96 months.
 - (d) Over 96 months.

40. Generating and Interchange Station Meter Tests; Schedule; Accuracy Limits.

A. Generating and interchange station and watthour meters shall be tested in conjunction with their associated equipment as follows:

- (1) At least once every twenty-four (24) months for generating station meters.

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- (2) At least once every twelve (12) months for interchange meters.
- B. The accuracy limits for any particular device shall not be greater than the accuracy limits required elsewhere in these rules.

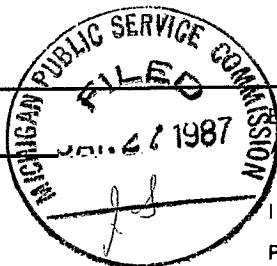
Standards of Quality of Services

41. Alternating Current Distribution Systems; Standard Frequency.

The standard frequency for alternating current distribution systems shall be 60 Hertz. The frequency shall be maintained within limits which will permit the satisfactory operation of customers' clocks which are connected to the system.

42. Standard Nominal Service Voltage; Limits; Exceptions.

- A. Each utility shall adopt and file with the Commission standard nominal service voltages used on its distribution system.
- B. With respect to secondary voltages, the following provisions shall apply:
 - (1) For all retail service, the variations of voltage shall be not more than 5% above or below the standard voltage, except as noted in subrule D. of this rule.
 - (2) Where three-phase service is provided, the utility shall exercise reasonable care to assure that the phase voltages are balanced within practical tolerances.
- C. With respect to primary voltages, the following provisions shall apply:
 - (1) For service rendered principally for industrial or power purposes, the voltage variation shall not be more than 5% above or below the



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standard nominal voltages as filed in the utility's rules, except as noted in subrule D. of this rule.

(2) The limitations in subdivision (1) of this rule do not apply to special contracts in which the customer specifically agrees to accept service with unregulated voltage.

D. Voltages outside the limits specified in this rule shall not be considered a violation in the following situations:

(1) If they arise from the action of the elements.

(2) If they are infrequent fluctuations.

(3) If they arise from service interruptions.

(4) If they arise from temporary separation of parts of the system from the main system.

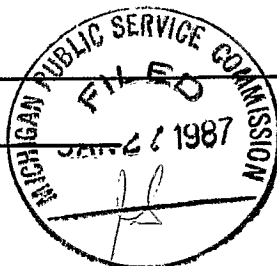
(5) If they arise from voltage reductions that are required to reduce system load at times of supply deficiency.

(6) If they are from causes beyond the control of the utility.

43. Voltage Measurements and Records.

A. Voltage measurements shall be made at the utility's service terminals. For single-phase service, the measurement shall be made between the grounded conductor and the ungrounded conductors, or between the ungrounded conductors. For three-phase service, the measurement shall be made between the phase wires.

B. Each utility shall make a sufficient number of voltage measurements, using recording voltmeters, to determine if voltages are in compliance with the requirements stated in Rule 42 beginning on Sheet number 93.

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C. All records obtained under subrule B. of this rule shall be retained by the utility for not less than two (2) years and shall be available for inspection by the Commission's representatives. These records shall indicate all of the following:

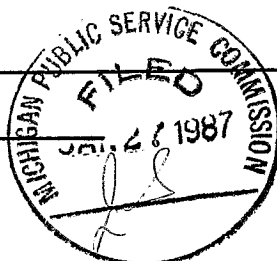
- (1) The location where the voltage was determined.
- (2) The time and date of the determination.
- (3) The results of the comparison with an indicating voltmeter at the time a recording meter is set.

44. Voltage Measurements; Required Equipment; Periodic Checks; Certificate or Calibration Card for Standards.

- A. Each utility shall have access to at least one indicating voltmeter with a stated accuracy within 0.25% of full scale. This instrument shall be maintained within its stated accuracy.
- B. Each utility shall have not less than two indicating voltmeters with a stated accuracy within 1.0% of full scale.
- C. Each utility shall have not less than two portable recording voltmeters with a stated accuracy within 1.5% of full scale.
- D. Standards shall be checked periodically (See Rule 34 beginning on Sheet Number 78) at the National Bureau of Standards or at a laboratory acceptable to the Commission.
- E. Working instruments shall be checked periodically (See Rule 32, Sheet Number 77) by comparing with a standard in the utility's meter shop.
- F. Extreme care shall be exercised in the handling of standards and instruments to assure that their accuracy is not disturbed.

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G. Each standard shall be accompanied at all times by a certificate or calibration card, duly signed and dated, on which the corrections required to compensate for errors found at the customary test points at the time of the last previous test are recorded.

45. Interruptions of Service; Records; Planned Interruption; Notice to Commission.

A. Each utility shall make a reasonable effort to avoid interruptions of service. When interruptions occur, service shall be re-established within the shortest time practicable, consistent with safety.

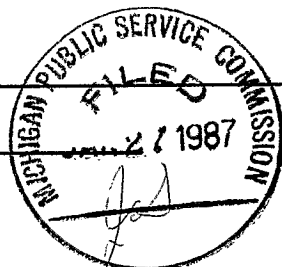
B. Each utility shall keep records of interruptions of service on its primary distribution system and shall make an analysis of the records for the purpose of determining steps to be taken to prevent recurrence of such interruptions. Such records shall include the following information concerning the interruptions:

- (1) Cause.
- (2) Date and time.
- (3) Duration.

C. The log for each unattended substation shall show interruptions which require attention at the substation to restore service, together with the estimated time of service restoration.

D. Planned interruptions shall be made at a time that will not cause unreasonable inconvenience to customers and shall be preceded, if feasible, by adequate notice to those who will be affected.

E. Each utility shall notify the Commission by telephone of any interruption to the service of a major portion of its distribution system if such interruption lasts for more than one hour.



ISSUED January 1, 1987

EFFECTIVE FOR SERVICE RENDERED ON AND AFTER January 1, 1987

BY: E. M. THEISEN
PRESIDENT
EAU CLAIRE, WISCONSIN

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STANDARD RULES AND REGULATIONS

Safety

46. Protective Measures.

Each utility shall exercise reasonable care to reduce the hazards to which its employees, its customers, and the general public may be subjected.

47. Safety Program.

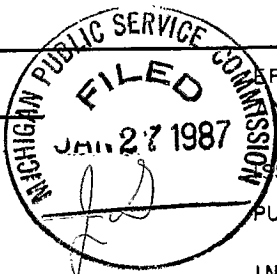
A. Each utility shall comply with the provisions of the Occupational Safety and Health Act, 29 U.S.C. §651 et seq., and Act No. 154 of the Public Acts of 1974, as amended, being §408.1001 et seq. of the Michigan Compiled Laws, and known as the Michigan Occupational Safety and Health Act, and shall adopt and execute a safety program fitted to the size and type of its operations. At a minimum, the safety program shall comply with the following provisions:

- (1) Require employees to use suitable tools and equipment in order that they perform their work in a safe manner.
- (2) Where appropriate, instruct employees in safe methods of performing their work.
- (3) Instruct employees, who in the course of their work are subject to the hazards of electrical shock or drowning, in accepted methods of artificial respiration.

48. Grounding of Secondary Distribution System.

Unless otherwise specified by the Commission, each utility shall comply and shall require its customers to comply with the provisions of the applicable codes for the grounding of service entrance facilities. Utility ground connections shall be tested for resistance at the time of installation, unless multi-grounding is used.

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