CR 82-61

1-AC-48

CERTIFICATE

STATE OF WISCONSIN)
) ss.
PUBLIC SERVICE COMMISSION)

TO ALL WHOM THESE PRESENTS SHALL COME, GREETINGS:

I, Joan Wentworth, Acting Secretary of the Public Service Commission of Wisconsin, and custodian of the official records of said commission, do hereby certify that the annexed order creating Wis. Adm. Code section PSC 113.70, 113.71, 113.72 and 113.73 and amending section PSC 113.33(1), 113.40(1)(c) and intro. to Part XI was duly approved and adopted by this commission on July 29, 1982.

I further certify that said copy has been compared by me with the original on file in this commission and that the same is a true copy thereof, and of the whole of such original.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the official seal of the commission at the Hill Farms State Office Building, in the City of Madison this 6th day of August, 1982.

Joan Wentworth

Joan Wentworth
Acting Secretary of the Public Service Commission of Wisconsin

10-1-82

BEFORE THE PUBLIC SERVICE COMMISSION OF WISCONSIN

Service Rules for Electric Utilities) 1-AC-48

ORDER OF THE PUBLIC SERVICE COMMISSION
CREATING AND AMENDING RULES

Relating to amendment and creation of service rules for electric utilities contained in Chapter PSC 113, Wis. Adm. Code. To amend secs. PSC 113.33(1), 113.40(1)(c) and intro. to Part XI, and create secs. 113.70, 113.71, 113.72 and 113.73, Wis. Adm. Code.

ANALYSIS PREPARED BY THE PUBLIC SERVICE COMMISSION OF WISCONSIN

The Public Service Commission, in response to Federal Energy Regulatory Commission action taken under secs. 201 and 210 of the Public Utility Regulatory Policies Act of 1978 (See 18 CFR Pt. 212), is placing in effect rates and rules for electric utilities which encourage the interconnection of customer-owned generating facilities with utility systems. To accomplish this, the Public Service Commission opened an investigation and initiated hearings in its docket 05-ER-11 (Investigation on the Implementation of Cogeneration and Small Power Production Rates and Rules, Pursuant to the Federal Energy Regulatory Commission's Rules Regarding Sections 201 and 210 of the Public Utility Regulatory Policies Act of 1978). Hearings before Examiner James Wolter were initiated September 9, 1980 and completed in October, 1981.

A technical advisory committee was appointed by the commission to study the technical safety and service concerns related to such interconnection of customer-owned generation with the utility system. The committee prepared a report which was introduced in evidence. That report contained various recommendations designed to address the safety and service concerns. The commission considered the recommendations from the committee and determined that such recommendations should be incorporated into the Wisconsin Administrative Code.

The installation of customer-owned generating facilities interconnected with the utility system on a potentially large-scale basis raises concerns relative to public and employe safety as well as the quality of service furnished other customers. Under certain conditions, should the utility lines experience an outage, the local generation could back-feed into the utility system introducing high voltage on lines otherwise thought to be de-energized. Further, under these circumstances the generation could result in high or low voltage at other customer locations thereby creating the potential for damage to customer electrical equipment or creating unsafe conditions. In other circumstances, even where the utility supply system is operating normally, there is the potential that customer-owned generation may cause abnormal voltage levels at nearby customer locations or introduce harmonics into the utility supply system which could cause interference in communication circuits in the area.

The rules being adopted in this order which will be included in a new Part XI of the chapter, will address the safety and service concerns by setting requirements and guidelines for utility rules which in turn would set conditions for interconnection, testing, operation and disconnection of the customer-owned generation facilities. The utility rules must be filed with and accepted by the commission to become effective. A provision for appeal to the commission in case a rule is considered excessive or unreasonable is also adopted.

The commission in another proceeding is requiring utilities to serve customers with certain smaller generation installations under a net billing rate whereby the meter would operate in the reverse registration mode when the customer's generation exceeds the load. A new section PSC 113.73 and additions to ss. PSC 113.33 and PSC 113.40 address this arrangement.

RULES AND STATUTORY AUTHORITY

Pursuant to authority vested in the Public Service Commission by sec. 196.16, and 196.74, Wis. Stats., the commission adopts rules as follows:

SECTION 1: Subsections PSC 113.33(1) and PSC 113.40(1)(c), Wis. Adm. Code, are amended to read:

> (1) 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 device to prevent reverse registration and be so connected as to meter separately energy flow in each direction.

Reverse meter registration is permitted for installations with customer-owned generators served under a net billing energy rate through one meter in accordance with s. PSC 113.73, Wis. Adm. Code.

PSC 113.40(1)(c):

(c) 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 wtihin 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.

Note: See s. PSC 113.73(2) for accuracy requirements for meters operating in the reverse-registration mode.

SECTION 2. Part XI, with sections 113.70 through 113.73, is created to read:

PART XI

RULES FOR INTERCONNECTION OF SMALL CUSTOMER-OWNED GENERATION WITH UTILITY SYSTEM FACILITIES

PSC 113.70: REQUIREMENTS FOR UTILITY RULES FOR INTERCONNECTION OF SMALL CUSTOMER-OWNED GENERATION FACILITIES WITH THE UTILITY SYSTEM. Each utility shall file with the commission service rules to ensure that interconnected customer-owned generation facilities are installed in a manner consistent with public and employe safety, adequate service to other customers and to ensure avoidance of communication interference problems. Requirements for the service rules follow:

(1) Interconnection of a generating facility with the utility system shall not be permitted until application has been made to and approval received from the electric utility. The utility may withhold approval only for good reason such as failure to comply with applicable utility or governmental rules or laws. The utility shall require a contract specifying reasonable technical connection and operating aspects for the parallel generating facility.

(2) The utility may require that for each generating facility there be provided between the generator or generators and the utility system a lockable load-break disconnect switch. For installations interconnected at greater than 600 volts a fused cutout switch may be substituted, where practicable. The switches shall be accessible to the utility for the purpose of isolating the parallel generating facility from the utility system when necessary.

(3) The utility shall require a separate distribution transformer for a customer having a generating facility where necessary, for reasons of public or employee safety or where the potential exists for the generating facility causing problems with the service of other customers. Ordinarily this requirement should not be necessary for an induction-type generator with a capacity of 5 kW or less, or other generating units of 10 kW or less that utilize line-commutated inverters.

(4) Where necessary, to avoid the potential for a facility causing problems with the service of other customers, the utility should limit the capacity and operating characteristics of single-phase generators in a manner consistent with its existing limitations for single-phase motors. Ordinarily single-phase generators should be limited to a capacity of 10 kW or less.

(5) The utility shall require that each generating facility have a system for automatically isolating the generator from the utility's system upon loss of the utility supply, unless the utility desires that the local generation be continued to supply isolated load. For synchronous and induction generators such protection against continued operation when isolated from the utility system will ordinarily consist of overcurrent protection, fuse or circuit breaker, plus a voltage or frequency controlled contactor which would automatically disconnect the unit whenever its output voltage or frequency drifted outside predetermined limits, such as plus or minus 10% of the rated values. Other suitable protective systems against abnormal voltages or frequencies may be accepted by the utility.

(6) The utility shall require that the customer discontinue parallel generation operation when it so requests and the utility may isolate the generating installation from its system at times:

1. When considered necessary to facilitate maintenance or repair of utility facilities.

2. When considered necessary during system emergencies.

3. When considered necessary during such times as the generating facility is operating in a hazardous manner, or is operating such that it adversely affects service to other customers or to nearby communication systems or circuits.

7. The owner of the generating facility shall be required to make the equipment available and permit entry upon the property by electric and communication utility personnel at reasonable times for the purposes of testing isolation and protective equipment, and evaluating the quality of power delivered to the utility's system; and testing to determine whether the local generating facility is the source of any electric service or communication systems problems.

8. The power output of the generating facility shall be maintained such that frequency and voltage are compatible with normal utility service and do not cause that utility service to fall outside the prescribed limits of commission rules and other standard limitations.

9. The generating facility shall be operated so that variations from acceptable voltage levels and other service impairing disturbances do not result in adverse effects on the service or equipment of other customers, and in a manner which does not produce undesirable levels of harmonics in the utility power supply.

10. The owner of the generating facility shall be responsible for providing protection for the owner's installed equipment and for adhering to all applicable national, state and local codes. The design and configuration of certain generating equipment such as that utilizing line-commutated inverters sometimes requires an isolation transformer as part of the generating installation for safety and for protection of the generating facilities.

PSC 113.71:

RIGHT TO APPEAL. The owner of a generating facility interconnected or proposed to be interconnected with a utility system may appeal to the commission should any requirement of the utility service rules filed in accordance with the provisions of PSC 113.70 be considered to be excessive or unreasonable. Such appeal

will be reviewed and the customer notified of the commission's determination.

PSC 113.72:

NOTICE TO COMMUNICATION FIRMS. Each electric utility shall notify telephone utility and cable television firms in the area when it knows that customer-owned generating facility is to be interconnected with its system. This notification shall be as early as practicable to permit coordinated analysis and testing in advance of interconnection, if considered necessary by the electric or telephone utility or cable television firm.

PSC 113.73:

METERING WITH ONE METER FOR NET ENERGY BILLING. (1) A single watthour meter may be used for net energy billing where reverse meter registration is intended to occur during reverse power flow through the meter and where the service is rendered under an authorized net-energy-billing tariff.

(2) When the meter is operating in the reverse registration mode it shall be accurate within plus or minus 2.0% at two unity power factor loads, one equal to 10% and the other 100% of the test ampere rating of the meter. A test to determine compliance with this accuracy requirement shall be made by the utility either before or at the time the customer-owned generator is placed in operation in accordance with utility rules. Subsequent tests for accuracy in the reverse registration mode are required only when requested by the customer and shall be at customer cost.

(3) Each utility shall maintain a record of the reverse-registration tests required in subsection (2) but for such tests the utility is not required to comply with § PSC 113.23, 113.50, 113.51, and 113.515, Wis. Adm. Code, with respect to meter testing or meter records.

There will be no fiscal impact of the proposed rules on the state or municipalities.

This action is classified as a Type III action according to PSC 2.90(3), Wis. Adm. Code. However, the commission prepared the Environmental Impact Statement on the Implementation of Rules and Rates for Cogeneration and Small Power Production which addresses issues pertinent to this case. No unusual circumstances have come to the attention of the commission that would require further environmental review of these proposed rules. Consequently, neither a separate environmental assessment nor environmental impact statement is required for the proposed rules.

The proposed rules have been sent to the legislature for review pursuant to sec. 227.018, Stats. They will take effect on the first day of the month following publication in the Wisconsin Administrative Register, as provided in sec. 227.026, Stats.

Dated at Madison, Wisconsin July 29, 1982

By the Commission.

Joan Hunt

Joan Hunt
Acting Secretary to the Commission

State of Wisconsin \ PUBLIC SERVICE COMMISSION

August 6, 1982

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Revisor of Statutes Bureau

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File No. 1-AC-48

Mr. Gary Poulson
Assistant Revisor of Statutes
411 West, State Capitol
Madison, Wisconsin 53702

Re: Service Rules for Electric Utilities

Dear Mr. Poulson:

Enclosed please find two copies (one certified) of an order of the Public Service Commission adopting rules in the above-entitled matter.

The rules have been seen by legislative committees (sent June 3, 1982). Thank you for your assistance.

Sincerely,

Steve Levine

Steven Levine
Assistant Chief Counsel

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Enc.