

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In Re: Adoption of Rule 25-) DOCKET NO. 920719-EI
17.087(6), F.A.C.,) ORDER NO. PSC-93-0601-FOF-EI
Interconnection and Standards) ISSUED: April 19, 1993
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The following Commissioners participated in the disposition of this matter:

J. TERRY DEASON, Chairman
THOMAS M. BEARD
JULIA L. JOHNSON
LUIS J. LAUREDO

NOTICE OF ADOPTION

NOTICE is hereby given that the Commission, pursuant to section 120.54, Florida Statutes, has adopted Rule 25-17.087(6), F.A.C., relating to interconnection and standards.

The rule was filed with the Department of State on April 16, 1993 and will be effective on May 6, 1993. A copy of the relevant portions of the certification filed with the Secretary of State is attached to this Notice.

This docket is closed upon issuance of this notice.

By ORDER of the Florida Public Service Commission this 19th day of April, 1993.

STEVE TRIBBLE, Director
Division of Records & Reporting

(S E A L)

by: Kay J. [Signature]
Chief, Bureau of Records

DOCUMENT NUMBER-DATE
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PSC-RECORDS/REPORTING

25-17.087 Interconnection and Standards.

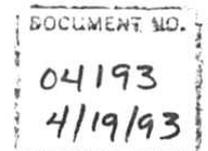
(1) Each utility shall interconnect with any qualifying facility which:

- (a) is in its service area;
- (b) requests interconnection;
- (c) agrees to meet system standards specified in this rule;
- (d) agrees to pay the cost of interconnection; and
- (e) signs an interconnection agreement.

(2) Nothing in this rule shall be construed to preclude a utility from evaluating each request for interconnection on its own merits and modifying the general standards specified in this rule to reflect the result of such an evaluation.

(3) Where a utility refuses to interconnect with a qualifying facility or attempts to impose unreasonable standards pursuant to subsection (2) of this rule, the qualifying facility may petition the Commission for relief. The utility shall have the burden of demonstrating to the Commission why interconnection with the qualifying facility should not be required or that the standards the utility seeks to impose on the qualifying facility pursuant to subsection (2) are reasonable.

(4) Upon a showing of credit worthiness, the qualifying facility shall have the option of making monthly installment payments over a period no longer than 36 months toward the full



cost of interconnection. However, where the qualifying facility exercises that option the utility shall charge interest on the amount owing. The utility shall charge such interest at the 30-day commercial paper rate. In any event, no utility may bear the cost of interconnection.

(5) Application for Interconnection. A qualifying facility shall not operate electric generating equipment in parallel with the utility's electric system without the prior written consent of the utility. Formal application for interconnection shall be made by the qualifying facility prior to the installation of any generation related equipment. This application shall be accompanied by the following:

(a) Physical layout drawings, including dimensions;

(b) All associated equipment specifications and characteristics including technical parameters, ratings, basic impulse levels, electrical main one-line diagrams, schematic diagrams, system protections, frequency, voltage, current and interconnection distance;

(c) Functional and logic diagrams, control and meter diagrams, conductor sizes and length, and any other relevant data which might be necessary to understand the proposed system and to be able to make a coordinated system;

(d) Power requirements in watts and vars;

(e) Expected radio-noise, harmonic generation and telephone interference factor;

(f) Synchronizing methods; and

(g) Operating/instruction manuals.

Any subsequent change in the system must also be submitted for review and written approval prior to actual modification. The above mentioned review, recommendations and approval by the utility do not relieve the qualifying facility from complete responsibility for the adequate engineering design, construction and operation of the qualifying facility equipment and for any liability for injuries to property or persons associated with any failure to perform in a proper and safe manner for any reason.

(6) Personnel Safety. Adequate protection and safe operational procedures must be developed and followed by the joint system. These operating procedures must be approved by both the utility and the qualifying facility. The qualifying facility shall be required to furnish, install, operate and maintain in good order and repair, and be solely responsible for, without cost to the utility, all facilities required for the safe operation of the generation system in parallel with the utility's system.

The qualifying facility shall permit the utility's employees to enter upon its property at any reasonable time for the purpose

of inspection and/or testing the qualifying facility's equipment, facilities, or apparatus. Such inspections shall not relieve the qualifying facility from its obligation to maintain its equipment in safe and satisfactory operating condition.

The utility's approval of isolating devices used by the qualifying facility will be required to ensure that these will comply with the utility's switching and tagging procedure for safe working clearances.

(a) Disconnect Switch. A manual disconnect switch, of the visible load break type, to provide a separation point between the qualifying facility's generation system and the utility's system, shall be required. The utility will specify the location of the disconnect switch. The switch shall be mounted separate from the meter socket and shall be readily accessible to the utility and be capable of being locked in the open position with a utility padlock. The utility may reserve the right to open the switch (i.e. isolating the qualifying facility's generation system) without prior notice to the qualifying facility. To the extent practicable, however, prior notice shall be given.

Any of the following conditions shall be cause for disconnection:

1. Utility system emergencies and/or maintenance requirements;

2. Hazardous conditions existing on the qualifying facility's generating or protective equipment as determined by the utility;

3. Adverse effects of the qualifying facility's generation to the utility's other electric consumers and/or system as determined by the utility;

4. Failure of the qualifying facility to maintain any required insurance; or

5. Failure of the qualifying facility to comply with any existing or future regulations, rules, orders or decisions of any governmental or regulatory authority having jurisdiction over the qualifying facility's electric generating equipment or the operation of such equipment.

(b) Responsibility and Liability. The utility and the qualifying facility shall each be responsible for its own facilities. The utility and the qualifying facility shall each be responsible for ensuring adequate safeguards for other utility customers, utility and qualifying facility personnel and equipment, and for the protection of its own generating system. The utility and the qualifying facility shall each indemnify and save the other harmless from any and all claims, demands, costs, or expense for loss, damage, or injury to persons or property of the other caused by, arising out of, or resulting from:

1. Any act or omission by a party or that party's contractors, agents, servants and employees in connection with the installation or operation of that party's generation system or the operation thereof in connection with the other party's system;

2. Any defect in, failure of, or fault related to a party's generation system;

3. The negligence of a party or negligence of that party's contractors, agents, servants or and employees; or

4. Any other event or act that is the result of, or proximately caused by, a party.

For the purposes of this paragraph subsection, the term party shall mean either utility or qualifying facility, as the case may be.

(c) Insurance.

The qualifying facility shall deliver to the utility, at least fifteen days prior to the start of any interconnection work, a certificate of insurance certifying the qualifying facility's coverage under a liability insurance policy issued by a reputable insurance company authorized to do business in the State of Florida naming the qualifying facility as named insured, and the utility as an additional named insured, which policy shall contain a broad form contractual endorsement specifically

covering the liabilities accepted under this agreement arising out of the interconnection to the qualifying facility, or caused by operation of any of the qualifying facility's equipment or by the qualifying facility's failure to maintain the qualifying facility's equipment in satisfactory and safe operating condition.

1. The policy providing such coverage for a standard offer contract shall provide public liability insurance, including property damage, in the an amount of not less than \$1,000,000 \$300,000 for each occurrence; more insurance may be required as deemed necessary by the utility.

2. The policy providing such coverage for a negotiated contract shall provide public liability insurance, including property damage, in an amount not less than \$1,000,000 for each occurrence. The parties may negotiate the amount of insurance over \$1,000,000.

3. In addition, Tthe above required policy shall be endorsed with a provision requiring whereby the insurance company to will notify the utility thirty days prior to the effective date of cancellation or material change in the policy.

4. The qualifying facility shall pay all premiums and other charges due on said policy and keep said policy in force during the entire period of interconnection with the utility.

(7) Protection and Operation. It will be the responsibility of the qualifying facility to provide all devices necessary to protect the qualifying facility's equipment from damage by the abnormal conditions and operations which occur on the utility system that result in interruptions and restorations of service by the utility's equipment and personnel. The qualifying facility shall protect its generator and associated equipment from overvoltage, undervoltage, overload, short circuits (including ground fault condition), open circuits, phase unbalance and reversal, over or under frequency condition, and other injurious electrical conditions that may arise on the utility's system and any reclose attempt by the utility.

The utility may reserve the right to perform such tests as it deems necessary to ensure safe and efficient protection and operation of the qualifying facility's equipment.

(a) Loss of Source: The qualifying facility shall provide, or the utility will provide at the qualifying facility's expense, approved protective equipment necessary to immediately, completely, and automatically disconnect the qualifying facility's generation from the utility's system in the event of a fault on the qualifying facility's system, a fault of the utility's system, or loss of source on the utility's system. Disconnection must be completed within the time specified by the

utility in its standard operating procedure for its electric system for loss of a source on the utility's system.

This automatic disconnecting device may be of the manual or automatic reclose type and shall not be capable of reclosing until after service is restored by the utility. The type and size of the device shall be approved by the utility depending upon the installation. Adequate test data or technical proof that the device meets the above criteria must be supplied by the qualifying facility to the utility. The utility shall approve a device that will perform the above functions at minimal capital and operating costs to the qualifying facility.

(b) Coordination and Synchronization. The qualifying facility shall be responsible for coordination and synchronization of the qualifying facility's equipment with the utility's electrical system, and assumes all responsibility for damage that may occur from improper coordination or synchronization of the generator with the utility's system.

(c) Electrical Characteristics. Single phase generator interconnections with the utility are permitted at power levels up to 20 KW. For power levels exceeding 20 KW, a three phase balanced interconnection will normally be required. For the purpose of calculating connected generation, 1 horsepower equals 1 kilowatt. The qualifying facility shall interconnect with the

utility at the voltage of the available distribution or the transmission line of the utility for the locality of the interconnection, and shall utilize one of the standard connections (single phase, three phase, wye, delta) as approved by the utility.

The utility may reserve the right to require a separate transformation and/or service for a qualifying facility's generation system, at the qualifying facility's expense. The qualifying facility shall bond all neutrals of the qualifying facility's system to the utility's neutral, and shall install a separate driven ground with a resistance value which shall be determined by the utility and bond this ground to the qualifying facility's system neutral.

(d) Exceptions. A qualifying facility's generator having a capacity rating that can:

1. produce power in excess of 1/2 of the minimum utility customer requirements of the interconnected distribution or transmission circuit; or

2. produce power flows approaching or exceeding the thermal capacity of the connected utility distribution or transmission lines or transformers; or

3. adversely affect the operation of the utility or other utility customer's voltage, frequency or overcurrent control and protection devices; or

4. adversely affect the quality of service to other utility customers; or

5. interconnect at voltage levels greater than distribution voltages, will require more complex interconnection facilities as deemed necessary by the utility.

(8) Quality of Service. The qualifying facility's generated electricity shall meet the following minimum guidelines:

(a) Frequency. The governor control on the prime mover shall be capable of maintaining the generator output frequency within limits for loads from no-load up to rated output. The limits for frequency shall be 60 hertz (cycles per second), plus or minus an instantaneous variation of less than 1%.

(b) Voltage. The regulator control shall be capable of maintaining the generator output voltage within limits for loads from no-load up to rated output. The limits for voltage shall be the nominal operating voltage level, plus or minus 5%.

(c) Harmonics. The output sine wave distortion shall be deemed acceptable when it does not have a higher content (root

mean square) of harmonics than the utility's normal harmonic content at the interconnection point.

(d) Power Factor. The qualifying facility's generation system shall be designed, operated and controlled to provide reactive power requirements from 0.85 lagging to 0.85 leading power factor. Induction generators shall have static capacitors that provide at least 85% of the magnetizing current requirements of the induction generator field. (Capacitors shall not be so large as to permit self-excitation of the qualifying facility's generator field).

(e) DC Generators. Direct current generators may be operated in parallel with the utility's system through a synchronous inverter. The inverter must meet all criteria in these rules.

(9) Metering. The actual metering equipment required, its voltage rating, number of phases, size, current transformers, potential transformers, number of inputs and associated memory is dependent on the type, size and location of the electric service provided. In situations where power may flow both in and out of the qualifying facility's system, power flowing into the qualifying facility's system will be measured separately from power flowing out of the qualifying facility's system.

The utility will provide, at no additional cost to the qualifying facility, the metering equipment necessary to measure capacity and energy deliveries to the qualifying facility. The utility will provide, at the qualifying facility's expense, the necessary additional metering equipment to measure energy deliveries by the qualifying facility to the utility.

(10) Cost Responsibility. The qualifying facility is required to bear all costs associated with the change-out, upgrading or addition of protective devices, transformers, lines, services, meters, switches, and associated equipment and devices beyond that which would be required to provide normal service to the qualifying facility if the qualifying facility were a non-generating customer. These costs shall be paid by the qualifying facility to the utility for all material and labor that is required. Prior to any work being done by the utility, the utility shall supply the qualifying facility with a written cost estimate of all its required materials and labor and an estimate of the date by which construction of the interconnection will be completed. This estimate shall be provided to the qualifying facility within 60 days after the qualifying facility supplies the utility with its final electrical plans. The utility shall also provide project timing and feasibility information to the qualifying facility.

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(11) Each utility shall submit to the Commission, a standard agreement for interconnection by qualifying facilities as part of their standard offer contract or contracts required by Rule 25-17.0832(3).

Specific Authority: 366.051, 350.127(2), F.S.

Law Implemented: 366.051, F.S.

History: New 9/4/83, formerly 25-17.87, Amended 10/25/90,
5/6/93.