

**RENEWABLE ENERGY STANDARD**

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**3650. Special Definitions**

The following definitions apply only to rules 3650 – 3665.

- (a) “Annual Report” means the report a QRU is required to file annually with the Commission pursuant to Rule 3662 to demonstrate compliance with the standard.
- (b) "Biomass" means nontoxic plant matter consisting of agricultural crops or their byproducts, urban wood waste, mill residue, slash, or brush; animal wastes and products of animal wastes; or methane produced at landfills or as a by-product of the treatment of wastewater residuals.
- (c) “Compliance Year” means a calendar year for which the Renewable Energy Standard is applicable.
- (d) “Co-fired System” means any system that combines the concept of co-firing (the simultaneous combustion of a supplementary fuel with a base fuel or a supplementary fossil fuel generation

with a base renewable generation) with the traditional method of generation or the renewable generation. Co-firing biomass (i.e., wood waste) with coal is considered to be an acceptable method for generating "green power" in a utility plant."

- (e) "Eligible Renewable Energy Resources" are facilities that generate electricity by means of the following energy sources: solar radiation, wind, geothermal, biomass, hydropower, and fuel cells using hydrogen derived from Eligible Renewable Energy Resources. Fossil and nuclear fuels and their derivatives are not eligible energy sources. Hydropower resources in existence on January 1, 2005 must have a nameplate rating of thirty megawatts or less. Hydropower resources not in existence on January 1, 2005 must have a nameplate rating of ten megawatts or less.
- (f) "Off-grid On-site Solar System" means an On-site Solar System located on the premises of an end-use electric consumer located within the service territory of a QRU or an electric utility that is eligible to become a QRU pursuant to §40-2-124(5)(b), C.R.S. that is not connected to, and operates completely independently from, the distribution system or transmission system facilities of any electric utility.
- (g) "On-site Solar System" means a Solar Renewable Energy System located on the premises of an end-use electric consumer located within the service territory of a QRU or an electric utility that is eligible to become a QRU pursuant to §40-2-124(5)(b), C.R.S. For the purposes of this definition, the non-residential end-use electric customer, prior to the installation of the Solar Renewable Energy System, shall not have its primary business being the generation of electricity for retail or wholesale sale from the same facility. In addition, at the time of the installation of the Solar Renewable Energy System, the non-residential end-use electric customer must use its existing facility for a legitimate commercial, industrial, governmental, or educational purpose other than the generation of electricity. An On-site Solar System is limited to a maximum size of 2 MW.
- (h) "Person" means Commission staff or any individual, firm, partnership, corporation, company, association, cooperative association, joint stock association, joint venture, governmental entity, or other legal entity.
- (i) "Qualifying Retail Utility" or "QRU" means any provider of retail electric service in the state of Colorado that serves over 40,000 customers.
- (j) "Renewable Energy" means energy generated from Eligible Renewable Energy Resources.
- (k) "Renewable Energy Credit" or "REC" means a contractual right to the full set of non-energy attributes, including any and all credits, benefits, emissions reductions, offsets, and allowances, howsoever entitled, directly attributable to a specific amount of electric energy generated from an Eligible Renewable Energy Resource. One REC results from one megawatt-hour of electric energy generated from an Eligible Renewable Energy Resource. For the purposes of these rules, RECs include, but are not limited to, S-RECs and SO-RECs.
- (l) "Renewable Energy Standard" means the electric resource standard for Eligible Renewable Energy Resources specified in §40-2-124, C.R.S.
- (m) "Solar Electric Generation Technologies" means any technology that uses solar radiation energy to generate electricity.
- (n) "Solar On-site Renewable Energy Credit" or "SO-REC" means a REC created by an On-site Solar System.

- (o) "Solar Renewable Energy Credit" or "S-REC" means a REC created by a Solar Renewable Energy System. For the purposes of these rules, S-RECs include, but are not limited to, SO-RECs.
- (p) "Solar Renewable Energy System" means a system that uses a Solar Electric Generation Technology to generate electricity.
- (q) "Standard Rebate Offer" or "SRO" means a standardized incentive program offered by a QRU to its retail electric service customers for On-site Solar Systems that do not exceed 100 kW per installation.
- (r) "Watt" means a unit of measure of alternating current electric power at a point in time, as capacity or demand. For the purposes of measurement of output from Solar Renewable Energy Systems used in the solar program, the watts referenced herein mean those determined by a nationally accepted testing organization.

### **3651. Overview and Purpose**

The purpose of these rules is to establish a process to implement the renewable energy standard for qualifying retail utilities in Colorado, pursuant to the power to regulate public utilities delegated to the Commission by §24-4-101 C.R.S., *et seq.*, §40-2-108 C.R.S., §40-3-102 C.R.S., §40-3-103 C.R.S., §40-4-101 C.R.S., and §40-2-124 C.R.S.

Section 40-2-124 was enacted by the voters of the State of Colorado as 2004 Ballot Amendment 37 and was amended by the 2005 Colorado General Assembly by Senate Bill 05-143.

Energy is critically important to Colorado's welfare and development, and its use has a profound impact on the economy and environment. Growth of the state's population and economic base will continue to create a need for new energy resources, and Colorado's renewable energy resources are currently underutilized.

Therefore, in order to save consumers and businesses money, attract new businesses and jobs, promote development of rural economies, minimize water use for electricity generation, diversify Colorado's energy resources, reduce the impact of volatile fuel prices, and improve the natural environment of the state, it is in the best interests of the citizens of Colorado to develop and utilize renewable energy resources to the maximum practicable extent.

### **3652. Applicability**

- (a) Rules 3650 to 3665 shall apply to all jurisdictional electric utilities in the state of Colorado which serve over 40,000 customers, that have not voted to exempt themselves, and are subject to the Commission's regulatory authority.
- (b) The board of directors of each QRU subject to these rules may, at its option, submit the question of its exemption from these rules to its consumers on a one meter equals one vote basis. Approval by a majority of those voting in the election shall be required for such exemption, providing that a minimum of 25% of eligible consumers participate in the election.
  - (l) Within 45 days of the conclusion of any vote for exemption, the QRU shall provide written notification of the outcome of the vote to the Director of the Commission.
- (c) The board of directors of each municipally owned electric utility or rural electric cooperative not subject to these rules may, at its option, submit the question of whether to be subject to these

rules to its consumers on a one meter equals one vote basis. Approval by a majority of those voting in the election shall be required for such inclusion, providing that a minimum of 25% of eligible consumers participates in the election.

- (I) Within 45 days of the conclusion of any vote to be subject to these rules, the municipally owned electric utility or rural electric cooperative shall provide written notification of the outcome of the vote to the Director of the Commission.
- (d) For municipal utilities and cooperative electric associations that become qualifying retail utilities after December 31, 2006, the percentage requirements identified in Rule 3654(a) shall begin in the first calendar year following qualification as follows:
  - (I) Years one through four: Three percent of retail electricity sales;
  - (II) Years five through eight: Six percent of retail electricity sales; and
  - (III) Year nine and thereafter: Ten percent of retail electricity sales.
- (e) Nothing in these rules is intended to expand the Commission's regulatory oversight and powers over municipally owned electric utilities or rural electric cooperatives.

**3653. Municipal and Cooperative Utilities**

- (a) If a municipally owned electric utility or a rural electric cooperative implements a renewable energy standard substantially similar to the provisions of §40-2-124 C.R.S., then the governing body of the municipally-owned electric utility or rural electric cooperative may self-certify the renewable energy standard and upon self-certification will have no obligations under this article.
- (b) The municipally owned utility or rural electric cooperative shall submit a statement to the Commission that demonstrates such a utility or cooperative has a substantially similar renewable energy standard. In order for a such a utility or cooperative to self-certify, such renewable energy standard shall at a minimum meet the following criteria:
  - (I) The eligible renewable energy resources must be limited to those identified in subsection §40-2-124(1)(a);
  - (II) The percentage requirements must be equal to or greater in the same years than those identified in subsection §40-2-124(1)(c)(I); and
  - (III) The utility must have an optional pricing program in effect that allows retail customers the option to support through utility rates emerging renewable energy technologies.
- (c) The statement to be submitted by a municipally owned utility or rural electric cooperative is for information purposes only and is not subject to approval by the Commission.
- (d) Nothing in this section prohibits a municipally owned electric utility or a rural electric cooperative from buying and selling RECs.

**3654. Renewable Energy Standard**

- (a) Each QRU shall generate or cause to be generated (through purchase or by providing rebates or other form of incentive) Eligible Renewable Energy in the following minimum amounts:

- (I) 3% of its retail electric energy sales in Colorado for each of the Compliance Years 2007 through 2010;
  - (II) 6% of its retail electric energy sales in Colorado for each of the Compliance Years 2011 through 2014;
  - (III) 10% of its retail electric energy sales in Colorado for each Compliance Year beginning in 2015 and continuing thereafter.
- (b) Of the Eligible Renewable Energy amounts specified in Rule 3654(a), at least four percent shall be derived from Solar Electric Generation Technologies. At least one-half of this four percent shall be derived from On-site Solar Systems located at customers' facilities.
- (c) For purposes of compliance with the Renewable Energy Standard, each kilowatt-hour of Eligible Renewable Energy generated in Colorado shall be counted as 1.25 kilowatt-hours of Eligible Renewable Energy.
- (d) For purposes of compliance with this Renewable Energy Standard, a QRU may generate, or cause to be generated, and count Eligible Renewable Energy for compliance:
- (I) For the Compliance Year immediately preceding the Compliance Year during which it was generated, provided that such Eligible Renewable Energy is generated no later than July 1 of the calendar year immediately following the end of the Compliance Year for which it is being counted;
  - (II) For the Compliance Year during which it was generated; or
  - (III) For the five Compliance Years immediately following the Compliance Year during which it was generated.
  - (IV) Eligible Renewable Energy generated on or after January 1, 2004 may be counted for compliance with this Renewable Energy Standard. Renewable Energy or RECs generated on or before December 31, 2003 shall not be eligible for, and shall not be counted for, compliance with this Renewable Energy Standard. The eligibility for compliance of all Eligible Renewable Energy shall expire at the end of the fifth calendar year following the calendar year during which it was generated.
- (e) For purposes of compliance with this Renewable Energy Standard, a QRU may substitute the equivalent RECs, S-RECs, or SO-RECs for Eligible Renewable Energy.
- (f) For the first four Compliance Years, 2007 through 2010, the QRU may borrow forward Eligible Renewable Energy generated during the following two Compliance Years. Any borrowed Eligible Renewable Energy generated during a Compliance Year must be made up by actual Eligible Renewable Energy generated during that Compliance Year or borrowed from subsequent Compliance Years, provided that the 2010 Compliance Year is the last Compliance Year that borrowing forward may occur pursuant to this rule. For purposes of this rule, the term "borrow forward" means that a QRU may count Eligible Renewable Energy that it has not yet generated or caused to be generated to satisfy its current year obligations toward compliance with the Renewable Energy Standard and the term "made up" means that any counting of Eligible Renewable Resources by a QRU in a Compliance Year that it had not actually generated nor caused to be generated shall be actually generated or caused to be generated in a subsequent year.

- (g) For the first four Compliance Years, 2007 through 2010, no administrative penalties shall be assessed against a QRU if the failure to meet the Renewable Energy Standard results from events beyond the reasonable control of the QRU which could not have reasonably been mitigated by the QRU.
- (h) For purposes of compliance with this Renewable Energy Standard, there shall be no “double counting” of Renewable Energy or RECs. Notwithstanding the foregoing, Eligible Renewable Energy generated or acquired by a QRU and counted toward compliance with a federal renewable energy standard may also be counted by the QRU toward compliance with the Renewable Energy Standard.
- (i) A QRU may apply to the Commission for a determination as to whether Eligible Renewable Energy sold by the QRU under an optional renewable energy pricing program may be counted by the QRU toward compliance with the Renewable Energy Standard. Such Eligible Renewable Energy shall not be counted toward compliance with the Renewable Energy Standard until the Commission grants approval of the utility’s application following an evidentiary hearing.
- (j) For purposes of compliance with this Renewable Energy Standard, if a generation system uses a combination of fossil fuel and Eligible Renewable Energy Resources to generate electricity, a QRU may count only as Eligible Renewable Energy the proportion of the total electric output of the generation system that results from the use of Eligible Renewable Energy Resources. The QRU shall include in its Annual Compliance Report the method of calculation used to determine the proportion of Eligible Renewable Energy.
- (k) The QRU may generate, or cause to be generated, Eligible Renewable Energy without regard to economic dispatch procedures.

**3655. Resource Acquisition**

- (a) It is the Commission’s policy that utilities should meet the Renewable Energy Standard in the most cost-effective manner and should use competitive bidding for renewable energy systems greater than 10 kW.
- (b) Competitive solicitations shall be conducted by each QRU to achieve the statutory policies contained in the legislative declaration of intent. To the extent possible, solicitations and evaluation of proposals should be coordinated to avoid redundancy and to minimize the cost of acquiring renewable energy and RECs. There shall be separate solicitations for:
  - (I) Renewable Energy from On-site solar systems (SO-RECs);
  - (II) Renewable Energy from Solar Energy Systems that are not on-site solar systems (S-RECs);
  - (III) Renewable Energy from non-solar resources such as wind, geothermal, biomass, hydropower, fuel cells;
  - (IV) Renewable Energy Credits;
  - (V) Solar Renewable Energy Credits; and
  - (VI) Solar On-site Renewable Energy Credits.

- (c) Each QRU shall develop standardized solar and non-solar electricity and REC contracts, and REC-only contracts, in advance of their first solicitation. Such contracts shall be submitted to the Commission for approval.
- (d) Renewable Energy Supply Contracts:
  - (I) Shall be for the acquisition of both electricity and RECs;
  - (II) May reflect a fixed price, or a price that varies by year; and
  - (III) Shall have a minimum term of 20 years (or shorter at the sole discretion of the seller).
  - (IV) Shall require the seller to relinquish all REC ownership associated with contracted electricity to buyer.
- (e) Renewable Energy Credit Contracts:
  - (I) Shall be for the acquisition of RECs only;
  - (II) May reflect a fixed price, or a price that varies by year; and
  - (III) Shall have a minimum term of 20 years.
- (f) Competitive solicitations for renewable energy credit contracts that provide SO-RECs from on-site solar systems shall be conducted at least two times per year by each QRU beginning in 2006.
  - (I) The treatment of any solar-generated electricity generated on-site in excess of the consumption of the host facility will be governed by the net metering provisions pursuant to Rule 3664.
- (g) Competitive solicitations for the acquisition of S-RECs shall be conducted by each QRU every three years with the initial solicitation beginning in 2006. S-REC requirements not likely to be met may be solicited from SO-REC providers.
- (h) Competitive solicitations for eligible renewable energy systems for those systems using eligible renewable resources other than solar shall be conducted by each QRU in a timeframe that takes into account the projected needs of the QRU. REC requirements not likely to be met may be solicited from S-REC and SO-REC providers.
- (i) Each competitive solicitation pursuant to these rules shall be for a fixed number of SO-RECs, S-RECs and RECs with the number determined by the QRU taking into account:
  - (I) The need to purchase the three classes of RECs for use to meet the QRU's future compliance requirements, and
  - (II) The estimated number of SO-RECs procured under and expected to be procured under the standing SO-REC offer.
- (j) Each QRU shall provide all parties to the bid process timely notice of bidding procedure.
- (k) Each QRU shall disclose all information that will be used in the acquisition process, including but not limited to, interconnection and transmission studies, and methods for modeling or otherwise analyzing bids.

- (l) If the QRU intends to accept proposals for renewable resources from the QRU or from an affiliate of the QRU, it shall include a written separation policy and name an independent auditor whom the utility proposes to hire to review and report to the Commission on the fairness of the competitive acquisition process. The independent auditor shall have at least five years' experience conducting and/or reviewing the conduct of competitive electric utility resource acquisition, including computerized portfolio costing analysis. The independent auditor shall be unaffiliated with the utility; and shall not, directly or indirectly, have benefited from employment or contracts with the utility in the preceding five years, except as an independent auditor under these rules. The independent auditor shall not participate in, or advise the utility with respect to, any decisions in the bid-solicitation or bid-evaluation process. The independent auditor shall conduct an audit of the utility's bid solicitation and evaluation process to determine whether it was conducted fairly. For purposes of such audit, the utility shall provide the independent auditor immediate and continuing access to all documents and data reviewed, used or produced by the utility in its bid solicitation and evaluation process. The utility shall make all its personnel, agents and contractors involved in the bid solicitation and evaluation available for interview by the auditor. The utility shall conduct any additional modeling requested by the independent auditor to test the assumptions and results of the bid evaluation analyses. Within 60 days of the utility's selection of final resources, the independent auditor shall file a report with the Commission containing the auditor's views on whether the utility conducted a fair bid solicitation and bid evaluation process, with any deficiencies specifically reported. After the filing of the independent auditor's report, the utility, other bidders in the resource acquisition process and other interested parties shall be given the opportunity to review and comment on the independent auditor's report.
- (m) Responses to competitive SO-REC, S-REC and REC solicitations shall be separately evaluated and ranked by the QRU.
- (l) In addition to the cost of the RECs, consideration shall be given to the characteristics of the underlying renewable resource including reliability, viability, economic development benefits, energy security benefits, amount of water used, fuel cost savings, environmental impacts including tradable emissions allowances savings, load reduction during higher cost hours, transmission capacity and scheduling and any other factor the Commission determines is relevant to the solicitation. The Commission shall also determine prior to the solicitation the appropriate weighting of the factors for consideration.
- (II) Bids with prices that vary by year will be evaluated by discounting the yearly prices at the utility discount rate.
- (III) A QRU is not required to accept any bid that exceeds 1.5 times the weighted average cost of RECs in all bids for any individual solicitation, unless authorized by the Commission.
- (IV) For purposes of comparing bids for RECs only with bids for electricity and RECs, the electricity shall be assigned the value contained in the applicable QRU's avoided capacity and energy tariff on file with the Commission. The QRUs will subtract this value from the electricity and RECs bid, and evaluate bids on the basis of RECs only, taking into account the value of any associated rebates.
- (V) Within 15 days, the QRU shall notify respondents as to whether the competitive solicitation requirements have been met.
- (VI) Within 45 days, the QRU will evaluate the eligible solicitation responses and rank in preferential order on the basis of the weighting factors.
- (n) Upon ranking of eligible bids, each QRU shall:

- (I) Within 15 days indicate to all respondents with which proposals it intends to pursue a contract, and
  - (II) Within 45 days have substantially completed contract negotiations.
- (o) If there is a dispute between a bidder and the QRU, the bidder shall refer any disputes to the Commission for resolution.

**3656. Environmental Impacts**

- (a) Renewable electric generation facilities must meet all applicable federal, state, and local environmental permitting requirements.
- (b) For Eligible Renewable Energy Resources larger than 2 MW with any structures extending over 50 feet in height, the QRU shall require project developers to include in the bid package written documentation that consultation occurred with appropriate governmental agencies (for example, the Colorado Division of Wildlife or the U.S. Fish and Wildlife Service) responsible for reviewing potential project development impacts to state and federally listed wildlife species, as well as species and habitats of concern.
- (c) For Eligible Renewable Energy Resources larger than 2 MW with any structures extending over 50 feet in height, the QRU renewable energy supply contract shall require project developers to perform and make publicly available site specific avian and other wildlife surveys conducted on each proposed site prior to construction. The results of these surveys shall be used in the design, placement, and management of the facilities to ensure that the environmental impacts of facility development are minimized to state and federally listed species and species of special concern, sites shown to be local bird migration pathways, critical habitat and areas where birds or other wildlife are highly concentrated and are considered at risk.

**3657. QRU Compliance Plan**

- (a) Every year on or before July 1, beginning in 2007, each QRU shall file with the Commission, by application, its proposed plan detailing how the QRU intends to comply with these rules during the next Compliance Year. Each QRU shall file with the Commission, by application, its proposed plan for the 2007 Compliance Year within 60 days after the effective date of these rules. Each annual QRU plan shall include rules, regulations and tariffs, if applicable, and the following:
  - (I) The QRU's:
    - (A) Determination of the retail rate impact pursuant to Rule 3661;
    - (B) Estimate of its retail electricity sales;
    - (C) Estimate of the Eligible Renewable Energy that the QRU already has acquired and the QRU's estimate of the additional Eligible Renewable Energy that will be needed to meet the Renewable Energy Standards;
    - (D) Estimate of the funds that the QRU will have available to generate, or cause to be generated, additional Eligible Renewable Energy under the Retail Rate Impact rule;
    - (E) Plan to acquire additional Eligible Renewable Energy given the constraints of the Retail Rate Impact rule, including the allocation of the funds available under the

Retail Rate Impact rule to acquire Renewable Energy or RECs from each of the following: On-site Solar Systems; Solar Renewable Energy Systems that are not On-site Solar Systems; and non-solar Renewable Energy;

- (F) Standard Rebate Offer and the QRU's estimate of the Eligible Renewable Energy that will be acquired under the Standard Rebate Offer;
  - (G) Plan to acquire the additional Eligible Renewable Energy, including the QRU's use of competitive acquisitions to obtain the additional solar Eligible Renewable Energy it needs to meet the Renewable Energy Standard;
  - (H) The proposed Request for Proposal including any standard contracts to be included with the acquisition for all Eligible Renewable Energy that the QRU plans to acquire by competitive acquisition; and
  - (I) Proposed ownership investment, if any, in Eligible Renewable Energy Resources and estimate of whether its investment will provide net economic benefits to the QRU's customers, entitling the QRU to extra profit on its investment, pursuant to Rule 3660.
- (II) The competitive acquisition process for renewable energy resources, pursuant to Rule 3655;
  - (III) The determination of minimizing environmental impacts from renewable energy resource, pursuant to Rule 3656;
  - (III) The establishment of the initial level and adjustments to the Standard Rebate Offer for solar electric generation resources, pursuant to Rule 3658;
  - (IV) The treatment, tracking, and trading of RECs, pursuant to Rule 3659;
  - (V) The establishment of a cost recovery mechanism, pursuant to Rule 3660;
  - (VI) The net metering for renewable energy resources, pursuant to Rule 3664;
  - (VII) The interconnection of renewable energy resources, pursuant to Rule 3665; and
  - (VIII) Twenty-year contracts for both the electricity generated from eligible renewable energy systems and RECs.
- (b) The Commission shall either approve the QRU's Compliance Plan or order modifications to the Compliance Plan. QRU actions consistent with an approved compliance plan will be presumed prudent.
  - (c) The QRU may apply to the Commission at any time for approval of amendments to an approved Compliance Plan.

**3658. Standard Rebate Offer**

- (a) Each QRU shall make available to its retail electricity customers a Standard Rebate Offer of \$2.00 per watt for On-Site Solar Systems, up to a maximum of 100 kW per system, that become operational on or after December 1, 2004. Any SO-RECs acquired by the QRU pursuant to such SRO program, regardless of whether the associated Renewable Energy is specifically metered or

contractually specified without specific metering, may be counted by the QRU for purposes of compliance with the Renewable Energy Standard.

- (b) On or before March 31, 2006, each QRU shall make a one-time offer to purchase, under a Renewable Energy Credit Contract, the SO-RECs associated with On-site Solar Systems, up to a maximum of 10 kW per system existing prior to December 1, 2004, and Off-grid On-site Solar Systems, up to a maximum of 10 kW per system. The purchase price offered by the QRU for such SO-RECs shall be no less than the QRU's then current standard offer payment rate for SO-RECs, exclusive of the standard rebate payment, associated with the QRU's Standard Rebate Offer and established pursuant to Rule 3658. Subsequent offers shall be made at the discretion of the QRU. SO-RECs purchased by a QRU pursuant to this rule may be counted for purposes of compliance with the Renewable Energy Standard.
- (c) The Standard Rebate Offer of the QRU shall be set forth at least annually and shall meet the following requirements:
- (I) The QRU need not offer a rebate for an On-site Solar System smaller than 500 watts.
  - (II) The rebate must be made available to all retail utility customers of the QRU on a non-discriminatory, first-come, first-served basis, based upon the date of contract execution.
  - (III) Applicants who are accepted for SRO rebates shall have one year from the date of contract execution to demonstrate substantial completion of their proposed On-site Solar System. Substantial completion means the purchase and installation on the customer's premises of all major system components of the On-site Solar System. Customers who do not achieve substantial completion within one year will not receive a rebate, unless the substantial completion date is extended. When substantial completion of an On-site Solar System has been achieved by an applicant pursuant to this rule the SO-RECs may be counted for purposes of compliance with the Renewable Energy Standard. Within 30 days of substantial completion, the SRO rebate, pursuant to Rule 3658(a), and SO-REC payment, pursuant to Rule 3658(c)(VIII), shall be paid to the applicant.
  - (IV) With the exception of batteries, all On-site Solar Systems eligible for SRO rebates shall be covered by a minimum five-year warranty. Contracts will require customers to maintain the On-site Solar System so that it remains operational for the term of the contract.
  - (V) On-site Solar Systems must consist of equipment that is commercially available and factory new when installed on the original customer's premises to be eligible for the SRO rebate. Rebuilt, used, or refurbished equipment is not eligible to receive the rebate.
  - (VI) Customers may contract to expand their On-site Solar Systems and obtain a rebate for the expanded capacity.
  - (VII) In order to receive the SRO rebate payment, the customer must enter into an agreement with the QRU, with a minimum term of 20 years, that transfers the SO-RECs generated by the On-site Solar System during the term of the agreement from the customer to the QRU.
  - (VIII) For On-site Solar Systems, up to and including 10 kW, that become operational on or after December 1, 2004, the QRU shall offer to make a one-time payment, in addition to the standard rebate payment, for the SO-RECs contracted to be transferred from the customer to the QRU. Any customer that receives the rebate payment and one-time SO-REC payment under this program shall not be entitled to any other compensation for the

SO-RECs contracted to be transferred to the QRU. To facilitate installation of these small systems, all procedures, forms, and requirements shall be clear, simple, and straightforward to minimize the time and effort of homeowners and small businesses.

- (IX) For On-site Solar Systems greater than 10 kW that become operational on or after December 1, 2004, the QRU, in addition to the standard rebate payment, shall offer to pay for the SO-RECs contracted to be transferred from the customer to the QRU. Such SO-RECs and the associated payments shall be determined by the specifically metered Renewable Energy output from the On-site Solar System.
- (X) The customer or its representative shall provide a calculation of the annual expected kilowatt-hour production from the customer's On-Site Solar System. The customer or its representative shall provide the following documentation to back up the customer's calculation:
  - (A) Tilt of the system in degrees (horizontal = 0 degrees);
  - (B) Orientation of the system in degrees (south = 180 degrees);
  - (C) A representation that the orientation of the system is free of trees, buildings and or other obstructions that might shade the system measured from the center point of the solar array through a horizontal angle plus or minus 60 degrees and a through vertical angle between 15 degrees and 90 degrees above the horizontal plane.
  - (D) A calculation of the annual expected kWh of electricity produced by the system. For PV systems, the calculation of annual expected kWh of electricity will be based on the public domain solar calculator PVWatts Version 1 (or equivalent upgrade).
    - (i) The weather station that is either nearest to or most similar in weather to the installation site;
    - (ii) The System Output rating which equals the module rating times the inverter efficiency times the number of modules;
    - (iii) Array Type: fixed tilt, single axis tracking, or 2 axis tracking; For variable tilt systems, the PVWatts calculations can be run multiple times corresponding to the number of times per year that the system tilt is expected to be changed using those months corresponding to the specific tilt angle used;
    - (iv) Array Tilt (degrees); and
    - (v) Array Azimuth (degrees).
  - (E) In the event PVWatts is no longer available, an equivalent tool shall be established.
  - (F) For On-Site Solar Systems up to and including 10 kW, the REC payment may be adjusted, either up or down, based on the calculation of expected kWh of electric output derived from Rule 3658(X)(D) as compared with an optimally oriented fixed, i.e. non-tracking, system at the customer's location, but only if the

calculated system output differs from the optimally oriented system output by more than 10%.

- (XI) The level of SO-REC payments for systems of 10 kW and smaller offered in connection with a QRU's SRO program may be adjusted from time to time as needed to achieve compliance with the Renewable Energy Standard.
- (XII) The On-site Solar System installed must remain in place on the customer's premises for the duration of its useful life. The customer's equipment must have electrical connections in accordance with industry practice for permanently installed equipment, and it must be secured to a permanent surface (e.g. foundation, roof, etc.). Any indication of portability, including, but not limited to, wheels, carrying handles, dolly, trailer or platform, will render the system ineligible for participation and payments under the SRO program.

### **3659. Renewable Energy Credits**

- (a) Renewable Energy Credits will be used to comply with the renewable energy standard. Eligible RECs acquired through a system of tradable renewable energy credits may be used by QRUs to comply with this standard. In calculating compliance, the total RECs acquired from renewable energy systems during a compliance year may include:
  - (I) RECs generated by the QRU or by a QRU affiliated renewable energy system;
  - (II) RECs acquired by the QRU pursuant to renewable energy contracts;
  - (III) RECs acquired by the QRU pursuant to renewable energy credit contracts;
  - (IV) RECs acquired by the QRU pursuant to a standing offer program;
  - (V) RECs carried forward from previous compliance years, as authorized by the Commission;
  - (VI) RECs borrowed forward from previous compliance years, pursuant to Rule 3654(f).
- (b) RECs representing electricity generated at renewable energy facilities located in the state of Colorado shall be counted as 1.25 the kilowatt-hours for the purpose of compliance with Rule 3654.
- (c) All contracts between QRUs and the owners of renewable energy facilities entered into after the effective day of these rules shall clearly specify the entity who shall own the RECs associated with the renewable energy facility.
- (d) The eligibility for compliance of an Eligible Renewable Energy Credit shall expire at the end of the fifth calendar year following the calendar year during which it was generated.
- (e) Eligible renewable energy credits that are generated on or after January 1, 2004 may be counted for compliance with this Renewable Energy Standard.
- (f) RECs shall be used for a single purpose only, and shall expire or be retired upon use for that purpose. All Eligible Renewable Energy Credits utilized by the QRU to comply with the renewable energy standard:
  - (I) May not be sold or otherwise exchanged with any other party, or in any other state or jurisdiction;

- (II) May not be included within a blended energy product certified to include a fixed percentage of renewable energy in any other state or jurisdiction;
  - (III) May not be used in conjunction with commercial environmental or renewable offers unless otherwise authorized by the Commission; and
  - (IV) May be counted simultaneously toward compliance with a federal renewable portfolio standard and with the Renewable Energy Standard.
- (g) RECs that are generated with fuel cell energy using hydrogen derived from an Eligible Renewable Energy Resource are eligible for compliance purposes only to the extent that the energy used to generate the hydrogen did not create renewable energy credits used for any of the purposes identified in Rule 3659 (f).
- (h) If a renewable energy system uses an Eligible Renewable Energy Resource in combination with a non-eligible energy source to generate electricity, only the RECs associated with the proportion of the total electric output of the renewable energy system that results from the use of Eligible Renewable Energy Resources shall be eligible to count toward compliance with the renewable energy standard. To be eligible under the conditions of this renewable energy system the system must be designed to produce either more than 1% of the system electrical output from renewable sources or more than 100 RECs per year.
- (i) The QRU shall establish a methodology for determining the appropriate amount of RECs generated by co-fired systems.
- (j) A QRU:
- (I) Shall develop an auditable process to account for RECs using a central database. In the absence of a central third-party database, the QRU shall maintain its own REC internal database and shall make an extract of the REC information available on the utility's website.
  - (II) Shall designate within its database any REC sold to a wholesaler if the REC has been assigned to that wholesaler.
  - (III) Shall apply for the inclusion of any losses or gains from the purchase or sale of RECs in the utility's next applicable rate proceeding.
- (k) The QRU shall record REC information from eligible renewable energy systems in a central database. The database shall include, but not be limited to, a list of all registered eligible renewable energy systems, including their type, location, owner, operator, start of operation, projected and actual REC generation, ownership, transfer and retirement. A summary database shall be provided to the Commission Staff and be publicly viewable via the Commission's worldwide web. Owners of registered eligible renewable energy systems may, at their option, have their name and address encoded for privacy. Systems that are encoded for privacy shall have a unique identifying number assigned, and will continue to have the zip code reported.
- (l) In conjunction with the QRU Compliance plans specified in Rule 3657, a QRU may make a request that the Commission allow the use of a central third-party database to account for RECs. If a QRU proposes to use a central third-party database for the accounting of RECs, the QRU must show that the central third-party database can be readily audited by the Commission Staff to verify that the renewable energy standard is met and that the alternative system is cost effective.

**3660. Cost Recovery**

- (a) The QRU shall be entitled to timely cost recovery through retail rate mechanisms for all funds prudently expended to comply with these rules, including the costs the QRU incurs to administer the Standard Rebate Offer and the acquisitions of Eligible Renewable Energy Resources. The QRU shall be entitled to recover its investment and expenses associated with these rules through appropriate adjustment clauses that allow recovery of expenditures without the full resetting of electric rates; provided, however, that costs recovered through these adjustment clauses that are usually recovered through base rates are incorporated into the QRU's base rates at the QRU's next general rate case.
- (b) In advance of the approval of the first Compliance Plan, a QRU may propose, by application, to implement a forward-looking cost recovery mechanism to provide funding for implementing the Renewable Energy Standard. In its application, the QRU must demonstrate that the funding mechanism proposed will not exceed the retail rate impact test. If approved, the forward-looking funding mechanism may be implemented prior to the first Compliance Year. Each QRU with a forward-looking cost recovery mechanism shall separately identify the forward-looking cost recovery mechanism on its customers' bills.
  - (l) Interest shall accrue on the unexpended balance of funds collected from a forward-looking rider. The interest rate shall be at the Commission's customer deposit interest rate at the time of the rider. A QRU may request interest on any funds it expends in excess of those collected through the forward-looking rider. The request for interest on excess expenditures shall include the reason(s) for the excess expenditures. The request for interest shall be included as part of the Annual Compliance Report, pursuant to Rule 3662.
- (c) If the QRU incurs costs in acquiring Eligible Renewable Energy to meet the Renewable Energy Standard that exceed the maximum retail rate impact, the QRU shall be entitled to carry forward these costs to a future year for cost recovery. These carried forward amounts shall be used to reduce the next year's expendable amount as provided under the Retail Rate Impact rule.
- (d) The QRU shall be entitled to earn an extra profit on the QRU's ownership investment in a specific Eligible Renewable Energy Resource if that Eligible Renewable Energy Resource provides net economic benefits to customers. For these investments, the QRU shall be entitled to a return equal to the QRU's most recent authorized rate of return on rate base plus a bonus limited to 50% of the net economic benefit as long as the QRU is in compliance with these rules implementing the Renewable Energy Standard. If the QRU's investment in a specific Eligible Renewable Energy Resource does not provide a net economic benefit to customers, the QRU shall be entitled to a return equal to the QRU's most recent authorized rate of return on rate base.
  - (l) For the purposes of this Rule 3660, net economic benefit shall mean that the specific Eligible Renewable Energy Resource in which the QRU has made an ownership investment results in an average retail rate impact less than the rate impact that would have resulted from the acquisition of the alternative Eligible Renewable Energy Resource meeting the same component of the Renewable Energy Standard that would have been selected absent the QRU's investment. The QRU shall set forth its calculation of the proposed net economic benefit either at the time of a compliance plan filing, an Annual Compliance Report filing, a QRU rate filing or by application. The Commission shall determine the level of the net economic benefit and the level of the bonus after review of the utility's filing. The Commission may set the matter for hearing if appropriate under the Commission's Rules of Practice and Procedure.

- (II) To the extent that a QRU uses computer modeling in its analysis of net economic benefit, the QRU shall use the same methodologies and assumptions it used in its most recently approved Least-Cost Planning case. All modeling inputs, methodologies and assumptions, except for unsuccessful bid price information, shall be available for all parties to review subject to the Commission's standard confidentiality provisions.
  - (III) Any net economic benefit for which the QRU qualifies to receive shall be included in the calculation of the Retail Rate Impact rule.
- (e) The utility is entitled to recover through rates, its prudently incurred expenditures. While not the exclusive method for establishing prudence, if the Commission approves a Renewable Energy Supply Contract or a Renewable Energy Credit Contract, the expenditures of the QRU under the contract shall be deemed to be prudent expenditures. The QRU may apply to the Commission, at any time, for review and approval of Renewable Energy Supply Contracts and Renewable Energy Credit Contracts. The Commission will review and rule on these contracts within sixty days of their filing. The Commission may set the contract for expedited hearing, if appropriate, under the Commission's Rules of Practice and Procedure. If the QRU enters into a Renewable Energy Supply Contract or a Renewable Energy Credit Contract in a form substantially similar to the form of contract approved by the Commission as part of the QRU's compliance plan, that contract shall be deemed approved by the Commission under this rule.
  - (f) If the QRU recovers fuel and purchased energy expense through an incentive adjustment clause, the QRU shall not receive a benefit from the incentive adjustment clause for the energy generated from QRU-owned Eligible Renewable Energy Resources, but the QRU shall be entitled to recover all the fuel and purchased energy costs associated with the Eligible Renewable Energy Resource.

**3661. Retail Rate Impact**

- (a) The net rate impact of actions taken by a QRU to comply with the Renewable Energy Standard shall not exceed one percent of the total electric bill annually for each customer of that QRU.
- (b) The net rate impact shall include the prudently incurred direct and indirect costs of all actions by a QRU to meet the Renewable Energy Standard, including, but not limited to, program administration, rebates and performance-based incentives, payments under Renewable Energy Supply Contracts, payments under Renewable Energy Credit Contracts, computer modeling and analysis time, and QRU investment in Eligible Renewable Energy Resources. The retail rate impact shall be determined net of new nonrenewable alternative sources of electricity supply reasonably available at the time of the determination.
- (c) In its Compliance Plan filed under Rule 3657, the QRU shall estimate the retail rate impact of its plans to comply with the Renewable Energy Standard over the upcoming Compliance Year and shall submit a report detailing the development of the retail rate impact estimate. The Compliance Plan shall identify the funds that need to be made available to the QRU to comply with the Renewable Energy Standard and the Retail Rate Impact rule. By approving the QRU's Compliance Plan, the Commission will be approving the QRU's budget for acquiring Eligible Renewable Energy over the Compliance Year. Once approved by the Commission, the QRU shall implement its Compliance Plan. Actions taken by a QRU in compliance with the filed and approved Compliance Plan shall be deemed prudent. The basic method for performing the estimate of the retail rate impact limit is as follows:
  - (I) For the purposes of calculating the retail rate impact, the QRU shall determine all resources available to the QRU, either through ownership or by contract, at the time of the beginning of the Compliance Year and for a minimum of the ten years thereafter (the

“RES Planning Period”). The projected costs of these available resources shall be reflected in both of the scenarios analyzed by the QRU’s computer planning models under this paragraph. The QRU shall determine the QRU’s capacity and energy requirements over the RES Planning Period. The QRU shall develop two scenarios to estimate the resource composition of the QRU’s future electric system and the cost of that system over the RES Planning Period. The first scenario, a Renewable Energy Standard Plan or “RES Plan” should reflect the QRU’s plans and actions to acquire Eligible Renewable Energy to meet the Renewable Energy Standard. The second scenario, a “No RES Plan” should reflect the QRU’s resource plan that meets the QRU’s capacity and energy requirements over the RES Planning Period by replacing new Eligible Renewable Energy Resources with new nonrenewable resources reasonably available.

- (II) The QRU shall use the comparison of the two model runs along with any additional analysis needed to calculate the estimated annual net retail rate impact. The maximum retail rate impact shall not exceed one percent of the total retail bill annually for each customer. To the extent the RES Plan exceeds this maximum retail rate impact, the QRU shall modify the RES Plan to limit the acquisition of Eligible Renewable Energy so that the QRU Compliance Plan does not exceed the maximum retail rate impact.
- d) The QRU can use an alternate method to determine the estimate of the retail rate impact. The alternative method can be used for those RES Planning Period years when: 1) the capacity and energy requirements have already been met and included in the QRU’s approved Electric Least-Cost Resource Plan; and 2) when the only remaining portion of the Renewable Energy Standard for which the QRU needs to comply with is Solar Electric Generating Technologies.
- (I) The retail rate impact will be determined by using the estimated costs of the proposed Solar Electric Generating Technologies less the estimated annual average costs of energy of existing resources that would be replaced with energy generated by the proposed Solar Electric Generating Technologies.
  - (II) The QRU will then convert this net cost figure into a percent of total electric bill annually for each customer. In no event shall the percent of total electric bill annually exceed one percent for each customer. To the extent that the net cost figure results in the QRU exceeding the one percent for each customer threshold, the QRU shall modify its acquisition of Solar Electric Generating Technologies in order to not exceed the maximum retail rate impact.
- (e) For purposes of calculating the retail rate impact, the QRU shall use the same methodologies and assumptions it used in its most recently approved Least-Cost Planning case. All modeling inputs, methodologies and assumptions, except for unsuccessful bid price information, shall be available for all parties to review subject to the Commission’s standard confidentiality provisions.
- (f) For purposes of calculating the retail rate impact, new Eligible Renewable Energy Resources means Eligible Renewable Energy Resources of the QRU, which are not currently operational.
- (g) The administrative costs of a QRU to implement these rules is capped at ten percent per year of the total annual collection. A QRU may include in its Compliance Plan a waiver request of this rule during the initial ramp-up stage of the QRU’s program.
- (h) If a wholesale customer agrees to pay the full costs associated with the acquisition of renewable resources and associated renewable energy credits by its wholesale provider, the wholesale customer shall be entitled to receive the appropriate credit toward the renewable energy standard as well as any associated renewable energy credits. To the extent that the full costs are not

recovered from wholesale customers, a qualifying retail utility shall be entitled to recover those costs from retail customers.

**3662. Annual Compliance Report**

- (a) Beginning in 2007, the QRU shall file an Annual Compliance Report on June 1 to report on the status of the QRU's compliance with the Renewable Energy Standard. The Annual Compliance Report shall provide the following information for the most recently completed Compliance Year:
- (I) The total megawatt-hours sold by the QRU to its retail customers in Colorado and the associated Eligible Renewable Energy required for compliance with each component of the Renewable Energy Standard. The QRU shall separately identify amounts of megawatt-hours sold by each type of resource;
  - (II) The total amount and source of Eligible Renewable Energy acquired by the QRU during the Compliance Year for each component of the Renewable Energy Standard. The QRU shall separately identify amounts of Eligible Renewable Energy by each type of resource;
  - (III) The total amount of Eligible Renewable Energy borrowed forward, pursuant to Rule 3654(f), in previous Compliance Years that was made up during the Compliance Year to achieve compliance with each component of the Renewable Energy Standard;
  - (IV) The total amount of Eligible Renewable Energy borrowed forward, pursuant to Rule 3654(f), from future Compliance Years to achieve compliance with each component of the Renewable Energy Standard in the Compliance Year;
  - (V) The total amount and source of Eligible Renewable Energy the QRU is carrying back from the year following the Compliance Year under Rule 3654(d)(I) to achieve compliance with each component of the Renewable Energy Standard in the Compliance Year;
  - (VI) The total amount of Eligible Renewable Energy the QRU has carried forward from prior calendar years under Rule 3654(d)(III) to apply in the Compliance Year for each component of the Renewable Energy Standard.
  - (VI) The total amount of Eligible Renewable Energy the QRU has acquired in the Compliance Year that the QRU proposes to carry forward under Rule 3654(d)(III) to future years for each component of the Renewable Energy Standard;
  - (VIII) The total amount of Eligible Renewable Energy the QRU has counted toward compliance with each component of the Renewable Energy Standard in the Compliance Year. The QRU shall separately identify amounts of Eligible Renewable Energy by each type of resource;
  - (IX) The total amount of Renewable Energy or RECs acquired by the QRU during the Compliance Year. The QRU shall separately identify REC amounts by each type of resource;
  - (X) Whether the QRU has invested in any Eligible Renewable Energy Resource and whether that resource is under construction or in operation; and
  - (XI) The funds expended and the retail rate impact of the Eligible Renewable Energy acquired.

- (b) In the Annual Compliance Report, the QRU must explain whether it achieved compliance with its Renewable Energy Standard for each of the components during the current Compliance Year, or explain why the QRU had difficulty meeting the Renewable Energy Standard.
- (c) If, in its Annual Compliance Report, the QRU did not comply with its Renewable Energy Standard for each of the RES components as a direct result of absolute limitations within a requirements contract from a wholesale electric supplier, then the QRU must explain whether it acquired a sufficient amount of either eligible RECs or documented and verified energy savings through energy efficiency and/or conservation programs, or both to rectify the noncompliance so as to excuse the QRU from any administrative fine or other administrative action.
- (d) On the same date that the QRU files its Annual Compliance Report, the QRU shall post an electronic copy of its Annual Compliance Report excluding confidential material on its website to facilitate public access and review.
- (e) On the same date that the QRU files its Annual Compliance Report, it shall provide the Commission with an electronic copy of its Annual Compliance Report excluding confidential material. The Commission may place the non-confidential portion of each QRU's Annual Compliance Report on the Commission's website in order to facilitate public review.

**3663. Compliance Report Review**

- (a) Compliance Reporting
  - (I) In the Annual Compliance Report, the QRU must explain whether it complied with its Renewable Energy Standard for the solar, on-site solar and non-solar components during the most recently completed Compliance Year.
  - (II) Upon receipt of the QRU Annual Compliance Report, the Commission will provide notice to interested persons. Interested persons will have 30 days within which to provide comment to the Commission on the content of the Annual Compliance Report. The QRU shall have the opportunity to reply to all comments on or before 45 days following the filing of the Annual Compliance Report.
  - (III) The Staff of the Commission shall review the annual compliance report and any comments received and within 60 days of the filing of the Annual Compliance Report make a recommendation to the Commission as to whether the QRU has met the Renewable Energy Standard and no action should be taken by the Commission, whether any changes are needed to the compliance report, or whether a hearing is necessary.
  - (IV) Upon review of the QRU's Annual Compliance Report, the Staff recommendation and all comments filed, the Commission will issue an order stating whether the QRU complied with the components of its Renewable Energy Standard during the most recently completed Compliance Year.
  - (V) If the Commission determines that the total number of RECs which the QRU generated or acquired from renewable energy systems during the most recently completed Compliance Year exceeded the total number of RECs which the QRU needed to comply with each component of its Renewable Energy Standard for the recently completed Compliance Year:
    - (A) The Commission will state in its order the number of excess solar, on-site solar and/or non-solar RECs which the QRU has available to carry forward from that Compliance Year or use for any other legal purpose.

- (B) The QRU may use those excess solar, on-site solar and/or non-solar RECs to comply with its Renewable Energy Standard for the five Compliance Years immediately following that Compliance Year.

(b) Compliance Report Hearing

- (I) If the Commission determines that the QRU did not comply with the solar, on-site solar or non-solar components of its Renewable Energy Standard during the most recently completed Compliance Year, the Commission will determine whether the QRU failed to meet the Renewable Energy Standard because of the Retail Rate Impact limit. The Commission will:
  - (A) State in its order the number of RECs by which the QRU failed to comply with each of the solar, on-site solar and non-solar components of its Renewable Energy Standard; and
  - (B) State whether the Commission is satisfied that the failure to meet the Renewable Energy Standard was due to the Retail Rate Impact limit. If the Commission is not satisfied on this issue, the Commission will issue a notice of possible noncompliance and schedule an evidentiary hearing on the matter.
- (II) At the evidentiary hearing, the QRU shall have the burden of proof that it complied with the solar, on-site solar and non-solar components of its Renewable Energy Standard during the most recently completed Compliance Year, or that compliance would have resulted in exceeding the retail rate cap. Such retail rate impact shall include only the direct prudently-incurred costs of acquisition including administration, rebates and performance-based incentives, and shall consider the offsetting benefits of renewable electricity utilized to comply with the standard including the costs that are avoided by the renewable energy systems.

(c) Compliance Penalties

- (I) If after notice and possible non-compliance report hearing, the Commission has discretion to determine that the QRU did not fully comply with any of the solar, on-site solar and non-solar components of its Renewable Energy Standard during the most recently completed Compliance Year or if the Commission determines that the QRU did not comply with any other provisions of the rules, the Commission shall take the following actions:
  - (A) Determine for each component for which there was noncompliance the cost that would have been incurred by the QRU to fully comply with such component standard through the acquisition of RECs and issue an order requiring the QRU to issue bill credits in such amounts to retail customers.
  - (B) Assess no administrative penalties against a QRU if the amount of the shortfall is attributable to the Retail Rate Impact limit.
  - (C) The Commission may also take other administrative action including imposition of administrative penalties against the QRU.
- (II) The cost of such bill credits or penalties shall not be recovered from retail customers through the QRU's rates.

**3664. Net Metering**

- (a) All QRUs shall allow the customer's retail electricity consumption to be offset by the electricity generated from Eligible Renewable Energy Resources on the customer's side of the meter that are interconnected with the QRU, provided that the generating capacity of the customer's facility meets the following two criteria:
  - (I) The rated capacity of the generator does not exceed 2000 kW; and
  - (II) The rated capacity of the generator does not exceed the customer's service entrance capacity.
- (b) If a customer with an Eligible Renewable Energy Resource generates Renewable Energy pursuant to subsection (a) of Rule 3664 in excess of the customer's consumption, the excess kilowatt-hours shall be carried forward from month to month and credited at a ratio of 1:1 against the customer's retail kilowatt-hour consumption in subsequent months. Within 60 days of the end of each calendar year, or within 60 days of when the customer terminates its retail service, the QRU shall compensate the customer for any accrued excess kilowatt-hour credits, at the QRU's average hourly incremental cost of electricity supply over the most recent calendar year.
- (c) The QRU shall file tariffs that comply with these rules within 30 days of the effective date of these rules.
- (d) A customer's facility that generates Renewable Energy from an Eligible Renewable Energy Resource shall be equipped with metering equipment that can measure the flow of electric energy in both directions. The QRU shall utilize a single bi-directional electric revenue meter.
- (e) If the customer's existing electric revenue meter does not meet the requirements of these rules, the QRU shall install and maintain a new revenue meter for the customer, at the company's expense. Any subsequent revenue meter change necessitated by the customer shall be paid for by the customer.
- (f) The QRU shall not require more than one meter per customer to comply with this Rule 3664. Nothing in this Rule 3664 shall preclude the QRU from placing a second meter to measure the output of a Solar Renewable Energy System for the counting of RECs subject to the following conditions:
  - (I) For customer facilities over 10 kW, a second meter shall be required to measure the Solar Renewable Energy System output for the counting of RECs.
  - (II) For systems 10 kW and smaller, an additional meter may be installed under either of the following circumstances:
    - (A) The QRU may install an additional production meter on the Solar Renewable Energy System output at its own expense if the customer consents; or
    - (B) The customer may request that the QRU install a production meter on the Solar Renewable Energy System output in addition to the revenue meter at the customer's expense.
- (g) A QRU shall provide net metering service at non-discriminatory rates to customers with Eligible Renewable Energy Resources. A customer shall not be required to change the rate under which the customer received retail service in order for the customer to install an eligible renewable

energy resource. Nothing in this rule shall prohibit a QRU from requesting changes in rates at any time.

### 3665. Interconnection

**NOTE: The following rule is numbered using the FERC's numbering convention and not the Colorado Commission's numbering convention. This rule largely tracks FERC Order 2006.**

#### Small Generator Interconnection Procedures (SGIP)

The following Small Generator Interconnection Procedures (SGIP) shall apply to all small generation resources including Eligible Renewable Energy Resources connected to the utility. Each utility shall also provide, on their web site, interconnection standards not included in these procedures.

(a) General Overview

(i) Applicability

- (1) A request to interconnect a certified Small Generating Facility no larger than 2 MW shall be evaluated under the Level 2 Process. A request to interconnect a certified inverter-based Small Generating Facility no larger than 10 kW shall be evaluated under the Level 1 Process. A request to interconnect a Small Generating Facility larger than 2 MW but no larger than 10 MW or a Small Generating Facility that does not pass the Level 1 or Level 2 Process, shall be evaluated under the Level 3 Process.
- (2) Capitalized terms used herein shall have the meanings specified in the Glossary of Terms in Attachment 1 of the body of these procedures.
- (3) Prior to submitting its Interconnection Request, the Interconnection Customer may ask the utility interconnection contact employee or office whether the proposed interconnection is subject to these procedures. The utility shall respond within 15 Business Days.
- (4) Infrastructure security of electric system equipment and operations and control hardware and software is essential to ensure day-to-day reliability and operational security. The Commission expects all utilities, market participants, and Interconnection Customers interconnected with electric systems to comply with the recommendations offered by the President's Critical Infrastructure Protection Board and best practice recommendations from the electric reliability authority. All public utilities are expected to meet basic standards for electric system infrastructure and operational security, including physical, operational, and cyber-security practices.
- (5) References in these procedures to interconnection agreement are to the Small Generator Interconnection Agreement (SGIA).

(ii) Pre-Application

The utility shall designate an employee or office from which information on the application process and on an Affected System can be obtained through informal requests from the Interconnection Customer presenting a proposed project for a specific site. The name, telephone number, and e-mail address of such contact employee or office shall be made available on the utility's Internet web site. Electric system information for specific locations, feeders, or small areas shall be provided to the Interconnection Customer upon request and may include relevant system studies, interconnection studies, and other

materials useful to an understanding of an interconnection at a particular point on the utility's System, to the extent such provision does not violate confidentiality provisions of prior agreements or critical infrastructure requirements. The utility shall comply with reasonable requests for such information unless such information is proprietary or confidential and cannot be provided pursuant to a confidentiality agreement.

- (iii) **Interconnection Request**  
The Interconnection Customer (IC) shall submit its Interconnection Request to the utility, together with the processing fee or deposit specified in the Interconnection Request. The Interconnection Request shall be date- and time-stamped upon receipt. The original date- and time-stamp applied to the Interconnection Request at the time of its original submission shall be accepted as the qualifying date- and time-stamp for the purposes of any timetable in these procedures. The Interconnection Customer shall be notified of receipt by the utility within three Business Days of receiving the Interconnection Request which notification may be to an e-mail address or fax number provided by IC. The utility shall notify the Interconnection Customer within ten Business Days of the receipt of the Interconnection Request as to whether the Interconnection Request is complete or incomplete. If the Interconnection Request is incomplete, the utility shall provide, along with the notice that the Interconnection Request is incomplete, a written list detailing all information that must be provided to complete the Interconnection Request. The Interconnection Customer will have ten Business Days after receipt of the notice to submit the listed information or to request an extension of time to provide such information. If the Interconnection Customer does not provide the listed information or a request for an extension of time within the deadline, the Interconnection Request will be deemed withdrawn. An Interconnection Request will be deemed complete upon submission of the listed information to the utility.
- (iv) **Modification of the Interconnection Request**  
Any modification to machine data or equipment configuration or to the interconnection site of the Small Generating Facility not agreed to in writing by the utility and the Interconnection Customer may be deemed a withdrawal of the Interconnection Request and may require submission of a new Interconnection Request, unless proper notification of each Party by the other and a reasonable time to cure the problems created by the changes are undertaken.
- (v) **Site Control Documentation of site control must be submitted with the Interconnection Request. Site control may be demonstrated through:**
  - (1) Ownership of, a leasehold interest in, or a right to develop a site for the purpose of constructing the Small Generating Facility;
  - (2) An option to purchase or acquire a leasehold site for such purpose; or
  - (3) An exclusivity or other business relationship between the Interconnection Customer and the entity having the right to sell, lease, or grant the Interconnection Customer the right to possess or occupy a site for such purpose.
- (vi) **Queue Position**  
The utility shall place Interconnection Requests in a first come, first served order per feeder and per substation based upon the date- and time-stamp of the Interconnection Request. The order of each Interconnection Request will be used to determine the cost responsibility for the Upgrades necessary to accommodate the interconnection. At the utility's option, Interconnection Requests may be studied serially or in clusters for the purpose of the system impact study.

(b) Level 2 - Fast Track Process

(i) Applicability

The Fast Track Process is available to an Interconnection Customer proposing to interconnect its Small Generating Facility with the utility's System if the Small Generating Facility is no larger than 2 MW and if the Interconnection Customer's proposed Small Generating Facility meets the codes, standards, and certification requirements of Attachments 3 and 4 of these procedures.

(ii) Initial Review

Within 15 Business Days after the utility notifies the Interconnection Customer it has received a complete Interconnection Request, the utility shall perform an initial review using the screens set forth below, shall notify the Interconnection Customer of the results, and include with the notification copies of the analysis and data underlying the utility's determinations under the screens.

(1) Screens

- A. The proposed Small Generating Facility's Point of Interconnection must be on a portion of the utility's Distribution System that is subject to the Tariff.
- B. For interconnection of a proposed Small Generating Facility to a radial distribution circuit, the aggregated generation, including the proposed Small Generating Facility, on the circuit shall not exceed 15 % of the line section's annual peak load as most recently measured at the substation or calculated for the line segment. A line section is that portion of a utility's electric system connected to a customer bounded by automatic sectionalizing devices or the end of the distribution line.
- C. The proposed Small Generating Facility, in aggregation with other generation on the distribution circuit, shall not contribute more than 10 % to the distribution circuit's maximum fault current at the point on the distribution feeder voltage (primary) level nearest the proposed point of change of ownership.
- D. The proposed Small Generating Facility, in aggregate with other generation on the distribution circuit, shall not cause any distribution protective devices and equipment (including, but not limited to, substation breakers, fuse cutouts, and line reclosers), or Interconnection Customer equipment on the system to exceed 87.5 % of the short circuit interrupting capability; nor shall the interconnection be proposed for a circuit that already exceeds 87.5 % of the short circuit interrupting capability.
- E. Using the table below, determine the type of interconnection to a primary distribution line. This screen includes a review of the type of electrical service provided to the Interconnecting Customer, including line configuration and the transformer connection to limit the potential for creating over-voltages on the utility's electric power system due to a loss of ground during the operating time of any anti-islanding function.

Primary Distribution Line Type	Type of Interconnection to Primary Distribution Line	Result/Criteria
Three-phase, three wire	3-phase or single phase, phase-to-phase	Pass screen
Three-phase, four wire	Effectively-grounded 3 phase or Single-phase, line-to-neutral	Pass screen

- F. If the proposed Small Generating Facility is to be interconnected on single-phase shared secondary, the aggregate generation capacity on the shared secondary, including the proposed Small Generating Facility, shall not exceed 20 kW.
  
- G. If the proposed Small Generating Facility is single-phase and is to be interconnected on a center tap neutral of a 240 volt service, its addition shall not create an imbalance between the two sides of the 240 volt service of more than 20 % of the nameplate rating of the service transformer.
  
- H. No construction of facilities by the utility on its own system shall be required to accommodate the Small Generating Facility.
  
- I. Interconnections to Distribution Networks
  - 1) For interconnection of a proposed Small Generating Facility to the load side of spot network protectors serving more than a single customer, the proposed Small Generating Facility must utilize an inverter-based equipment package and, together with the aggregated other inverter-based generation, shall not exceed the smaller of 5 % of a spot network's maximum load or 300 kW. For spot networks serving a single customer, the Small Generator Facility must use inverter-based equipment package and either meet the requirements above or shall use a protection scheme or operate the generator so as not to exceed on-site load or otherwise prevent nuisance operation of the spot network protectors.
  
  - 2) For interconnection of a proposed Small Generating Facility to the load side of area network protectors, the proposed Small Generating Facility must utilize an inverter-based equipment package and, together with the aggregated other inverter-based generation, shall not exceed the smaller of 10% of an area network's minimum load or 500 kW.
  
  - 3) Notwithstanding sub-sections (1) or (2) above, each utility may incorporate into its interconnection standards, any change in interconnection guidelines related to networks pursuant to standards developed under IEEE P1547 for interconnections to networks. To the extent the new IEEE standards conflict with these existing guidelines, the new standards shall apply. In addition, and with the consent of the utility, a Small Generator Facility may be interconnected to a spot or area network

provided the Facility utilizes a protection scheme that will prevent any power export from the customer's site including inadvertent export under fault conditions or otherwise prevent nuisance operation of the network protectors.

- (2) If the proposed interconnection passes the screens, the Interconnection Request shall be approved and the utility will provide the Interconnection Customer an executable interconnection agreement within five Business Days after the determination.
  - (3) If the proposed interconnection fails the screens, but the utility determines that the Small Generating Facility may nevertheless be interconnected consistent with safety, reliability, and power quality standards, the utility shall provide the Interconnection Customer an executable interconnection agreement within five Business Days after the determination.
  - (4) If the proposed interconnection fails the screens, but the utility does not or cannot determine from the initial review that the Small Generating Facility may nevertheless be interconnected consistent with safety, reliability, and power quality standards unless the Interconnection Customer is willing to consider minor modifications or further study, the utility shall provide the Interconnection Customer with the opportunity to attend a customer options meeting.
  - (5) **Customer Options Meeting**  
If the utility determines the Interconnection Request cannot be approved without minor modifications at minimal cost; or a supplemental study or other additional studies or actions; or at significant cost to address safety, reliability, or power quality problems, within the five Business Day period after the determination, the utility shall notify the Interconnection Customer and provide copies of the data and analyses underlying its conclusion. Within ten Business Days of the utility's determination, the utility shall offer to convene a customer options meeting with the utility to review possible Interconnection Customer facility modifications or the screen analysis and related results, to determine what further steps are needed to permit the Small Generating Facility to be connected safely and reliably. At the time of notification of the utility's determination, or at the customer options meeting, the utility shall:
    - A. Offer to perform facility modifications or minor modifications to the utility's electric system (e.g., changing meters, fuses, relay settings) and provide a non-binding good faith estimate of the limited cost to make such modifications to the utility's electric system; or
    - B. Offer to perform a supplemental review if the utility concludes that the supplemental review might determine that the Small Generating Facility could continue to qualify for interconnection pursuant to the Fast Track Process, and provide a non-binding good faith estimate of the costs and time of such review; or
    - C. Obtain the Interconnection Customer's agreement to continue evaluating the Interconnection Request under the Level 3 Study Process.
- (iii) **Supplemental Review**  
If the Interconnection Customer agrees to a supplemental review, the Interconnection Customer shall agree in writing within 15 Business Days of the offer, and submit a

deposit for the estimated costs provided in (iii) (1) (B). The Interconnection Customer shall be responsible for the utility's actual costs for conducting the supplemental review. The Interconnection Customer must pay any review costs that exceed the deposit within 20 Business Days of receipt of the invoice or resolution of any dispute. If the deposit exceeds the invoiced costs, the utility will return such excess within 20 Business Days of the invoice without interest.

- (1) Within ten Business Days following receipt of the deposit for a supplemental review, the utility will determine if the Small Generating Facility can be interconnected safely and reliably.
  - A. If so, the utility shall forward an executable interconnection agreement to the Interconnection Customer within five Business Days.
  - B. If so, and Interconnection Customer facility modifications are required to allow the Small Generating Facility to be interconnected consistent with safety, reliability, and power quality standards under these procedures, the utility shall forward an executable interconnection agreement to the Interconnection Customer within five Business Days after confirmation that the Interconnection Customer has agreed to make the necessary changes at the Interconnection Customer's cost.
  - C. If so, and minor modifications to the utility's electric system are required to allow the Small Generating Facility to be interconnected consistent with safety, reliability, and power quality standards under the Level 2 Fast Track Process, the utility shall forward an executable interconnection agreement to the Interconnection Customer within ten Business Days that requires the Interconnection Customer to pay the costs of such system modifications prior to interconnection.
  - D. If not, the Interconnection Request will continue to be evaluated under the Level 3 Study Process.

(c) Level 3 - Study Process

- (j) Applicability  
The Study Process shall be used by an Interconnection Customer proposing to interconnect its Small Generating Facility with the utility's System if the Small Generating Facility (1) is larger than 2 MW but no larger than 10 MW, (2) is not certified, or (3) is certified but did not pass the Fast Track Process or the 10 kW Inverter Process.
- (ii) Scoping Meeting
  - (1) A scoping meeting will be held within ten Business Days after the Interconnection Request is deemed complete, or as otherwise mutually agreed to by the Parties. The utility and the Interconnection Customer will bring to the meeting personnel, including system engineers and other resources as may be reasonably required to accomplish the purpose of the meeting.
  - (2) The purpose of the scoping meeting is to discuss the Interconnection Request. The Parties shall further discuss whether the utility should perform a feasibility study or proceed directly to a system impact study, or a facilities study, or an interconnection agreement. If the Parties agree that a feasibility study should be performed, the utility shall provide the Interconnection Customer, as soon as

possible, but not later than five Business Days after the scoping meeting, a feasibility study agreement (Attachment 6) including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study.

- (3) The scoping meeting may be omitted by mutual agreement. In order to remain in consideration for interconnection, an Interconnection Customer who has requested a feasibility study must return the executed feasibility study agreement within 15 Business Days. If the Parties agree not to perform a feasibility study, the utility shall provide the Interconnection Customer, no later than five Business Days after the scoping meeting, a system impact study agreement (Attachment 7) including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study.
- (4) Feasibility Studies, Scoping Studies, and Facility Studies may be combined for simpler projects by mutual agreement of the utility and the Parties.

(iii) Feasibility Study

- (1) The feasibility study shall identify any potential adverse system impacts that would result from the interconnection of the Small Generating Facility.
- (2) A deposit of the lesser of 50 percent of the good faith estimated feasibility study costs or earnest money of \$1,000 may be required from the Interconnection Customer.
- (3) The scope of and cost responsibilities for the feasibility study are described in the attached feasibility study agreement.
- (4) If the feasibility study shows no potential for adverse system impacts, the utility shall send the Interconnection Customer a facilities study agreement, including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study.
- (5) If the feasibility study shows the potential for adverse system impacts, the review process shall proceed to the appropriate system impact study(s).

(iv) System Impact Study

- (1) A system impact study shall identify and detail the electric system impacts that would result if the proposed Small Generating Facility were interconnected without project modifications or electric system modifications, focusing on the adverse system impacts identified in the feasibility study, or to study potential impacts, including but not limited to those identified in the scoping meeting. A system impact study shall evaluate the impact of the proposed interconnection on the reliability of the electric system.
- (2) If no transmission system impact study is required, but potential electric power Distribution System adverse system impacts are identified in the scoping meeting or shown in the feasibility study, a distribution system impact study must be performed. The utility shall send the Interconnection Customer a distribution system impact study agreement within 15 Business Days of transmittal of the feasibility study report, including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study, or following the scoping meeting if no feasibility study is to be performed.

- (3) In instances where the feasibility study or the distribution system impact study shows potential for transmission system adverse system impacts, within five Business Days following transmittal of the feasibility study report, the utility shall send the Interconnection Customer a transmission system impact study agreement, including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study, if such a study is required.
  - (4) If a transmission system impact study is not required, but electric power Distribution System adverse system impacts are shown by the feasibility study to be possible and no distribution system impact study has been conducted, the utility shall send the Interconnection Customer a distribution system impact study agreement.
  - (5) If the feasibility study shows no potential for transmission system or Distribution System adverse system impacts, the utility shall send the Interconnection Customer either a facilities study agreement (Attachment 8), including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study, or an executable interconnection agreement, as applicable.
  - (6) In order to remain under consideration for interconnection, the Interconnection Customer must return executed system impact study agreements, if applicable, within 30 Business Days.
  - (7) A deposit of the good faith estimated costs for each system impact study may be required from the Interconnection Customer.
  - (8) The scope of and cost responsibilities for a system impact study are described in the attached system impact study agreement.
  - (9) Where transmission systems and Distribution Systems have separate owners, such as is the case with transmission-dependent utilities ("TDUs") – whether investor-owned or not – the Interconnection Customer may apply to the nearest utility (Transmission Owner, Regional Transmission Operator, or Independent utility) providing transmission service to the TDU to request project coordination. Affected Systems shall participate in the study and provide all information necessary to prepare the study.
- (v) Facilities Study
- (1) Once the required system impact study(s) is completed, a system impact study report shall be prepared and transmitted to the Interconnection Customer along with a facilities study agreement within five Business Days, including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the facilities study. In the case where one or both impact studies are determined to be unnecessary, a notice of the fact shall be transmitted to the Interconnection Customer within the same timeframe.
  - (2) In order to remain under consideration for interconnection, or, as appropriate, in the utility's interconnection queue, the Interconnection Customer must return the executed facilities study agreement or a request for an extension of time within 30 Business Days.

- (3) The facilities study shall specify and estimate the cost of the equipment, engineering, procurement, and construction work (including overheads) needed to implement the conclusions of the system impact study(s).
- (4) Design for any required Interconnection Facilities and/or Upgrades shall be performed under the facilities study agreement. The utility may contract with consultants to perform activities required under the facilities study agreement. The Interconnection Customer and the utility may agree to allow the Interconnection Customer to separately arrange for the design of some of the Interconnection Facilities. In such cases, facilities design will be reviewed and/or modified prior to acceptance by the utility, under the provisions of the facilities study agreement. If the Parties agree to separately arrange for design and construction, and provided security and confidentiality requirements can be met, the utility shall make sufficient information available to the Interconnection Customer in accordance with confidentiality and critical infrastructure requirements to permit the Interconnection Customer to obtain an independent design and cost estimate for any necessary facilities.
- (5) A deposit of the good faith estimated costs for the facilities study may be required from the Interconnection Customer.
- (6) The scope of and cost responsibilities for the facilities study are described in the attached facilities study agreement.
- (7) Upon completion of the facilities study, and with the agreement of the Interconnection Customer to pay for Interconnection Facilities and Upgrades identified in the facilities study, the utility shall provide the Interconnection Customer an executable interconnection agreement within five Business Days.

(d) Provisions that Apply to All Interconnection Requests

- (i) Reasonable Efforts  
The utility shall make reasonable efforts to meet all time frames provided in these procedures unless the utility and the Interconnection Customer agree to a different schedule. If the utility cannot meet a deadline provided herein, it shall notify the Interconnection Customer, explain the reason for the failure to meet the deadline, and provide an estimated time by which it will complete the applicable interconnection procedure in the process.
- (ii) Disputes
  - (1) The Parties agree to attempt to resolve all disputes arising out of the interconnection process according to the provisions of this article.
  - (2) In the event of a dispute, either Party shall provide the other Party with a written Notice of Dispute. Such Notice shall describe in detail the nature of the dispute.  
4.2.3 If the dispute has not been resolved within five Business Days after receipt of the Notice, either Party may contact a mutually agreed upon third party dispute resolution service for assistance in resolving the dispute.
  - (3) The dispute resolution service will assist the Parties in either resolving their dispute or in selecting an appropriate dispute resolution venue (e.g., mediation, settlement judge, early neutral evaluation, or technical expert) to assist the Parties in resolving their dispute.

- (4) Each Party agrees to conduct all negotiations in good faith and will be responsible for one-half of any costs paid to neutral third-parties.
  - (5) If neither Party elects to seek assistance from the dispute resolution service, or if the attempted dispute resolution fails, then either Party may exercise whatever rights and remedies it may have in equity or law consistent with the terms of this Agreement or it may seek resolution at the Commission.
- (iii) **Interconnection Metering**  
Any metering necessitated by the use of the Small Generating Facility shall be installed at the Interconnection Customer's expense in accordance with Commission requirements or the utility's specifications.
- (iv) **Commissioning tests**  
Commissioning tests of the Interconnection Customer's installed equipment shall be performed pursuant to applicable codes and standards. The utility must be given at least five Business Days written notice, or as otherwise mutually agreed to by the Parties, of the tests and may be present to witness the commissioning tests.
- (v) **Confidentiality**
- (1) Confidential information shall mean any confidential and/or proprietary information provided by one Party to the other Party that is clearly marked or otherwise designated "Confidential." For purposes of this Agreement, all design, operating specifications, and metering data provided by the Interconnection Customer shall be deemed confidential information regardless of whether it is clearly marked or otherwise designated as such.
  - (2) Confidential Information does not include information previously in the public domain, required to be publicly submitted or divulged by Governmental Authorities (after notice to the other Party and after exhausting any opportunity to oppose such publication or release), or necessary to be divulged in an action to enforce this Agreement. Each Party receiving Confidential Information shall hold such information in confidence and shall not disclose it to any third party nor to the public without the prior written authorization from the Party providing that information, except to fulfill obligations under this Agreement, or to fulfill legal or regulatory requirements.
    - A. Each Party shall employ at least the same standard of care to protect Confidential Information obtained from the other Party as it employs to protect its own Confidential Information.
    - B. Each Party is entitled to equitable relief, by injunction or otherwise, to enforce its rights under this provision to prevent the release of Confidential Information without bond or proof of damages, and may seek other remedies available at law or in equity for breach of this provision.
  - (3) Notwithstanding anything in this article to the contrary, if the Commission, during the course of an investigation or otherwise, requests information from one of the Parties that is otherwise required to be maintained in confidence pursuant to this Agreement, the Party shall provide the requested information to the Commission, within the time provided for in the request for information. In providing the information to the Commission, the Party may request that the information be

treated as confidential and non-public by the Commission and that the information be withheld from public disclosure. Parties are prohibited from notifying the other Party to this Agreement prior to the release of the Confidential Information to the Commission. The Party shall notify the other Party to this Agreement when it is notified by the Commission that a request to release Confidential Information has been received by the Commission, at which time either of the Parties may respond before such information would be made public.

- (vi) **Comparability**  
The utility shall receive, process, and analyze all Interconnection Requests in a timely manner as set forth in this document. The utility shall use the same reasonable efforts in processing and analyzing Interconnection Requests from all Interconnection Customers, whether the Small Generating Facility is owned or operated by the utility, its subsidiaries or affiliates, or others.
- (vii) **Record Retention**  
The utility shall maintain for three years records, subject to audit, of all Interconnection Requests received under these procedures, the times required to complete Interconnection Request approvals and disapprovals, and justification for the actions taken on the Interconnection Requests.
- (viii) **Interconnection Agreement**  
After receiving an interconnection agreement from the utility, the Interconnection Customer shall have 30 Business Days or another mutually agreeable time-frame to sign and return the interconnection agreement, or request that the utility file an unexecuted interconnection agreement with the Commission. If the Interconnection Customer does not sign the interconnection agreement, or ask that it be filed unexecuted by the utility within 30 Business Days, the Interconnection Request shall be deemed withdrawn. After the interconnection agreement is signed by the Parties, the interconnection of the Small Generating Facility shall proceed under the provisions of the interconnection agreement.
- (ix) **Coordination with Affected Systems**  
The utility shall coordinate the conduct of any studies required to determine the impact of the Interconnection Request on Affected Systems with Affected System operators and, if possible, include those results (if available) in its applicable interconnection study within the time frame specified in these procedures. The utility will include such Affected System operators in all meetings held with the Interconnection Customer as required by these procedures. The Interconnection Customer will cooperate with the utility in all matters related to the conduct of studies and the determination of modifications to Affected Systems. A utility which may be an Affected System shall cooperate with the utility with whom interconnection has been requested in all matters related to the conduct of studies and the determination of modifications to Affected Systems.
- (x) **Capacity of the Small Generating Facility**
  - (1) If the Interconnection Request is for an increase in capacity for an existing Small Generating Facility, the Interconnection Request shall be evaluated on the basis of the new total capacity of the Small Generating Facility.
  - (2) If the Interconnection Request is for a Small Generating Facility that includes multiple energy production devices at a site for which the Interconnection Customer seeks a single Point of Interconnection, the Interconnection Request shall be evaluated on the basis of the aggregate capacity of the multiple devices.

- (3) The Interconnection Request shall be evaluated using the maximum rated capacity of the Small Generating Facility.

(xi) Insurance

- (1) For systems of 10 kW or less, the Customer, at its own expense, shall secure and maintain in effect during the term of the Agreement liability insurance with a combined single limit for bodily injury and property damage of not less than \$300,000 for each occurrence. For systems above 10 kW and up to 2 MW, Customer, at its own expense, shall secure and maintain in effect during the term of the Agreement liability insurance with a combined single limit for bodily injury and property damage of not less than \$2,000,000 for each occurrence. Insurance coverage for systems greater than 2 MW shall be determined on a case-by-case basis by the utility and shall reflect the size of the installation and the potential for system damage.
- (2) Except for those solar systems installed on a residential premise which have a design capacity of 10 kW or less, the utility shall be named as an additional insured by endorsement to the insurance policy and the policy shall provide that written notice be given to the utility at least thirty (30) days prior to any cancellation or reduction of any coverage. Such liability insurance shall provide, by endorsement to the policy, that the utility shall not by reason of its inclusion as an additional insured incur liability to the insurance carrier for the payment of premium of such insurance. For all solar systems, the liability insurance shall not exclude coverage for any incident related to the subject generator or its operation.
- (3) Certificates of Insurance evidencing the requisite coverage and provision(s) shall be furnished to utility prior to the Date of Interconnection of the Generation System. Utilities shall be permitted to periodically obtain proof of current insurance coverage from the generating customer in order to verify proper liability insurance coverage. Customer will not be allowed to commence or continue interconnected operations unless evidence is provided that satisfactory insurance coverage is in effect at all times.

(e) Level 1 10 kW Inverter Process

The procedure for evaluating an Interconnection Request for a certified inverter-based Small Generating Facility no larger than 10 kW. The application process uses an all-in-one document that includes a simplified Interconnection Request, simplified procedures, and a brief set of terms and conditions.

- (i) The Interconnection Customer ("Customer") completes the Interconnection Request ("Application") and submits it to the utility.
- (ii) The utility acknowledges to the Customer receipt of the Application within three Business Days of receipt.
- (iii) The utility evaluates the Application for completeness and notifies the Customer within ten Business Days of receipt that the Application is or is not complete and, if not, advises what material is missing.
- (iv) Within 15 days the utility shall conduct an initial review, which shall include the following screening criteria:

- (1) For interconnection of a proposed Small Generating Facility to a radial distribution circuit, the aggregated generation, including the proposed Small Generating Facility, on the circuit shall not exceed 15 % of the line section annual peak load as most recently measured at the substation or calculated for the line section. A line section is that portion of a utility's electric system connected to a customer bounded by automatic sectionalizing devices or the end of the distribution line.
- (2) If the proposed Small Generating Facility is to be interconnected on single-phase shared secondary, the aggregate generation capacity on the shared secondary, including the proposed Small Generating Facility, shall not exceed 20 kW.
- (3) If the proposed Small Generating Facility is single-phase and is to be interconnected on a center tap neutral of a 240 volt service, its addition shall not create an imbalance between the two sides of the 240 volt service of more than 20% of the nameplate rating of the service transformer.
- (4) No construction of facilities by the utility on its own system shall be required to accommodate the Small Generating Facility.
- (5) Provided all the criteria in Section 5.4 are met, unless the utility determines and demonstrates that the Small Generating Facility cannot be interconnected safely and reliably, the utility approves and executes the Application and returns it to the Customer.
- (6) After installation, the Customer returns the Certificate of Completion to the utility. Prior to parallel operation, the utility may inspect the Small Generating Facility for compliance with standards, which may include a witness test, and may schedule appropriate metering replacement, if necessary.
- (7) The utility notifies the Customer in writing or by fax or e-mail that interconnection of the Small Generating Facility is authorized within five business days. If the witness test is not satisfactory, the utility has the right to disconnect the Small Generating Facility. The Customer has no right to operate in parallel until a witness test has been performed, or previously waived on the Application. The utility is obligated to complete this witness test within ten Business Days of the receipt of the Certificate of Completion.
- (8) Contact Information – The Customer must provide the contact information for the legal applicant (i.e., the Interconnection Customer). If another entity is responsible for interfacing with the utility, that contact information must be provided on the Application.

#### **Attachment 1 - Definitions**

**Business Day** – Monday through Friday, excluding Federal Holidays.

**Distribution System** – The utility's facilities and equipment used to transmit electricity to ultimate usage points such as homes and industries directly from nearby generators or from interchanges with higher voltage transmission networks which transport bulk power over longer distances. The voltage levels at which Distribution Systems operate differ among areas.

**Distribution Upgrades** – The additions, modifications, and upgrades to the utility's Distribution System at or beyond the Point of Interconnection to facilitate interconnection of the Small

Generating Facility and render the service necessary to effect the Interconnection Customer's operation of on-site generation. Distribution Upgrades do not include Interconnection Facilities.

**Interconnection Customer** – Any entity, including the utility, any affiliates or subsidiaries of either, that proposes to interconnect its Small Generating Facility with the utility's System.

**Interconnection Facilities** – The utility's Interconnection Facilities and the Interconnection Customer's Interconnection Facilities. Collectively, Interconnection Facilities include all facilities and equipment between the Small Generating Facility and the Point of Interconnection, including any modification, additions or upgrades that are necessary to physically and electrically interconnect the Small Generating Facility to the utility's System. Interconnection Facilities are sole use facilities and shall not include Distribution Upgrades.

**Interconnection Request** – The Interconnection Customer's request, in accordance with the Tariff, to interconnect a new Small Generating Facility, [We will have a Tariff] or to increase the capacity of, or make a Material Modification to the operating characteristics of, an existing Small Generating Facility that is interconnected with the utility's System.

**Party or Parties** – The utility, Interconnection Customer, or any combination of the above.

**Point of Interconnection** – The point where the Interconnection Facilities connect with the utility's System.

**Small Generating Facility** – The Interconnection Customer's device for the production of electricity identified in the Interconnection Request, but shall not include the Interconnection Facilities not owned by the Interconnection Customer.

**Study Process** – The procedure for evaluating an Interconnection Request that includes the Level 3 scoping meeting, feasibility study, system impact study, and facilities study.

**System** – The facilities owned, controlled, or operated by the utility that are used to provide electric service under the Tariff.

**Upgrades** – The required additions and modifications to the utility's System at or beyond the Point of Interconnection. Upgrades do not include Interconnection Facilities.

## **Attachment 2 - Level 1 10 kW Inverter Process**

### **Application for Interconnecting a Certified Inverter-Based Small Generating Facility No Larger than 10kW**

This Application is considered complete when it provides all applicable and correct information required below. Additional information to evaluate the Application may be required.

Processing Fee

A fee of \_\_\_\_\_ must accompany this Application.

Interconnection Customer

Name:

Contact Person:

Address:

City: State: Zip:

Telephone (Day): (Evening):

Fax: E-Mail Address:

Engineering Firm (If Applicable):

Contact Person:

Address:

City: State: Zip:

Telephone:

Fax: E-Mail Address:

Contact (if different from Interconnection Customer)

Name:

Address:

City: State: Zip:

Telephone (Day): (Evening):

Fax: E-Mail Address:

Owner of the facility (include % ownership by any electric utility):

Small Generating Facility Information

Location (if different from above):

Electric Service Company:

Account Number:

Small Generator 10 kW Inverter Process

Inverter Manufacturer: \_\_\_\_\_ Model

Nameplate Rating: (kW) (kVA) (AC Volts)

Single Phase \_\_\_\_\_ Three Phase \_\_\_\_\_

System Design Capacity: \_\_\_\_\_ (kW) \_\_\_\_\_ (kVA)

Prime Mover: Photovoltaic Reciprocating Engine Fuel Cell

Turbine Other

Energy Source: Solar Wind Hydro Diesel Natural Gas

Fuel Oil Other (describe)

Is the equipment UL1741 Listed? Yes \_\_\_\_\_ No \_\_\_\_\_

If Yes, attach manufacturer's cut-sheet showing UL1741 listing

Estimated Installation Date: \_\_\_\_\_ Estimated In-Service Date: \_\_\_\_\_

The 10 kW Inverter Process is available only for inverter-based Small Generating Facilities no larger than 10 kW that meet the codes, standards, and certification requirements of Attachments 3 and 4 of the Small Generator Interconnection Procedures (SGIP), or the QRU has reviewed the design or tested the proposed Small Generating Facility and is satisfied that it is safe to operate.

List components of the Small Generating Facility equipment package that are currently certified:

Equipment Type Certifying Entity

- 1.
- 2.
- 3.
- 4.
- 5.

Interconnection Customer Signature \_\_\_\_\_

I hereby certify that, to the best of my knowledge, the information provided in this Application is true. I agree to abide by the Terms and Conditions for Interconnecting an Inverter-Based Small Generating Facility No Larger than 10kW and return the Certificate of Completion when the Small Generating Facility has been installed. I further agree to relinquish my claims to any REC that will be generated with my equipment as part of this agreement.

Signed: \_\_\_\_\_

Title:

Date:

Contingent Approval to Interconnect the Small Generating Facility

(For Company use only)

Interconnection of the Small Generating Facility is approved contingent upon the Terms and Conditions for Interconnecting an Inverter-Based Small Generating Facility No Larger than 10kW and return of the Certificate of Completion.

Company Signature: \_\_\_\_\_

Title: Date:

Application ID number: \_\_\_\_\_

Company waives inspection/witness test? Yes \_\_\_\_ No \_\_\_\_

### **Attachment 3**

#### **Certification Codes and Standards**

IEEE1547 Standard for Interconnecting Distributed Resources with Electric Power Systems (including use of IEEE 1547.1 testing protocols to establish conformity)

UL 1741 Inverters, Converters, and Controllers for Use in Independent Power Systems

IEEE Std 929-2000 IEEE Recommended Practice for Utility Interface of Photovoltaic (PV) Systems

NFPA 70 (2005), National Electrical Code

IEEE Std C37.90.1-1989 (R1994), IEEE Standard Surge Withstand Capability (SWC) Tests for Protective Relays and Relay Systems

IEEE Std C37.90.2 (1995), IEEE Standard Withstand Capability of Relay Systems to Radiated Electromagnetic Interference from Transceivers

IEEE Std C37.108-1989 (R2002), IEEE Guide for the Protection of Network Transformers

IEEE Std C57.12.44-2000, IEEE Standard Requirements for Secondary Network Protectors

IEEE Std C62.41.2-2002, IEEE Recommended Practice on Characterization of Surges in Low Voltage (1000V and Less) AC Power Circuits

IEEE Std C62.45-1992 (R2002), IEEE Recommended Practice on Surge Testing for Equipment Connected to Low-Voltage (1000V and Less) AC Power Circuits

ANSI C84.1-1995 Electric Power Systems and Equipment – Voltage Ratings (60 Hertz)

IEEE Std 100-2000, IEEE Standard Dictionary of Electrical and Electronic Terms

NEMA MG 1-1998, Motors and Small Resources, Revision 3

IEEE Std 519-1992, IEEE Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems

NEMA MG 1-2003 (Rev 2004), Motors and Generators, Revision 1

### **Attachment 4**

#### **Certification of Small Generator Equipment Packages**

- 1.0 Small Generating Facility equipment proposed for use separately or packaged with other equipment in an interconnection system shall be considered certified for interconnected operation

if (1) it has been tested in accordance with industry standards for continuous utility interactive operation in compliance with the appropriate codes and standards referenced below by any Nationally Recognized Testing Laboratory (NRTL) recognized by the United States Occupational Safety and Health Administration to test and certify interconnection equipment pursuant to the relevant codes and standards listed in SGIP Attachment 3, (2) it has been labeled and is publicly listed by such NRTL at the time of the interconnection application, and (3) such NRTL makes readily available for verification all test standards and procedures it utilized in performing such equipment certification, and, with consumer approval, the test data itself. The NRTL may make such information available on its website and by encouraging such information to be included in the manufacturer's literature accompanying the equipment.

- 2.0 The Interconnection Customer must verify that the intended use of the equipment falls within the use or uses for which the equipment was tested, labeled, and listed by the NRTL.
- 3.0 Certified equipment shall not require further type-test review, testing, or additional equipment to meet the requirements of this interconnection procedure; however, nothing herein shall preclude the need for an on-site commissioning test by the parties to the interconnection nor follow-up production testing by the NRTL.
- 4.0 If the certified equipment package includes only interface components (switchgear, inverters, or other interface devices), then an Interconnection Customer must show that the generator or other electric source being utilized with the equipment package is compatible with the equipment package and is consistent with the testing and listing specified for this type of interconnection equipment.
- 5.0 Provided the generator or electric source, when combined with the equipment package, is within the range of capabilities for which it was tested by the NRTL, and does not violate the interface components' labeling and listing performed by the NRTL, no further design review, testing or additional equipment on the customer side of the point of common coupling shall be required to meet the requirements of this interconnection procedure.
- 6.0 An equipment package does not include equipment provided by the utility.

## **Attachment 5**

### **Terms and Conditions for Level 1 Interconnections -- Small Generating Facility No Larger than 10kW**

#### **1.0 Construction of the Facility**

The Interconnection Customer (the "Customer") may proceed to construct the Small Generating Facility when the utility approves the Interconnection Request (the "Application") and returns it to the Customer.

#### **2.0 Interconnection and Operation**

The Customer may operate Small Generating Facility and interconnect with the utility's electric system once all of the following have occurred:

- 2.1 Upon completing construction, the Customer will cause the Small Generating Facility to be inspected or otherwise certified by the appropriate local electrical wiring inspector with jurisdiction, and
- 2.2 The Customer returns the Certificate of Completion to the utility, and

- 2.3 The utility has completed its inspection of the Small Generating Facility to ensure that all equipment has been appropriately installed and that all electrical connections have been made in accordance with applicable codes. All inspections must be conducted by the utility, at its own expense, within ten Business Days after receipt of the Certificate of Completion and shall take place at a time agreeable to the Parties. The utility shall provide a written statement that the Small Generating Facility has passed inspection or shall notify the Customer of what steps it must take to pass inspection as soon as practicable after the inspection takes place.
- 2.4 The utility has the right to disconnect the Small Generating Facility in the event of improper installation or failure to return the Certificate of Completion.

### **3.0 Safe Operations and Maintenance**

The Customer shall be fully responsible to operate, maintain, and repair the Small Generating Facility as required to ensure that it complies at all times with the interconnection standards to which it has been certified.

### **4.0 Access**

The utility shall have access to the disconnect switch and metering equipment of the Small Generating Facility at all times. The utility shall provide reasonable notice to the Customer when possible prior to using its right of access.

### **5.0 Disconnection**

The utility may temporarily disconnect the Small Generating Facility upon the following conditions:

- 5.1 For scheduled outages per notice requirements in the utility's tariff or Commission rules.
- 5.2 For unscheduled outages or emergency conditions pursuant to the utility's tariff or Commission rules.
- 5.3 If the Small Generating Facility does not operate in the manner consistent with these Terms and Conditions.
- 5.4 The utility shall inform the Customer in advance of any scheduled disconnection, or as is reasonable after an unscheduled disconnection.

### **6.0 Indemnification**

The Parties shall at all times indemnify, defend, and save the other Party harmless from, any and all damages, losses, claims, including claims and actions relating to injury to or death of any person or damage to property, demand, suits, recoveries, costs and expenses, court costs, attorney fees, and all other obligations by or to third parties, arising out of or resulting from the other **Party's action or inactions of its obligations under this agreement on behalf of the indemnifying Party**, except in cases of gross negligence or intentional wrongdoing by the indemnified Party.

### **7.0 Insurance**

Customer, at its own expense, shall secure and maintain in effect during the term of this Agreement, liability insurance with a combined single limit for bodily injury and property damage of not less than \$300,000 each occurrence. Such liability insurance shall not exclude coverage for any incident related to

the subject generator or its operation. The utility shall be named as an additional insured under the liability policy unless the system is installed on a premise using residential tariff and has a designed capacity of 10 kW or less. The policy shall include that written notice be given to the utility at least thirty (30) days prior to any cancellation or reduction of any coverage. A copy of the liability insurance certificate must be received by the utility prior to plant operation.

Certificates of Insurance evidencing the requisite coverage and provision(s) shall be furnished to utility prior to Date of Interconnection of the Generation System. A copy of any renewals shall be sent to the utility's Authorized Operating Representative so that the utility is always in possession of a current Certificate of Insurance. Customer will not be allowed to commence or continue interconnected operations unless evidence is provided that satisfactory insurance coverage is in effect at all times.

### **8.0 Limitation of Liability**

Each party's liability to the other party for any loss, cost, claim, injury, liability, or expense, including reasonable attorney's fees, relating to or arising from any act or omission in its performance of this Agreement, shall be limited to the amount of direct damage actually incurred.

In no event shall either party be liable to the other party for any indirect, incidental, special, consequential, or punitive damages of any kind whatsoever, except as allowed under paragraph 6.0.

### **9.0 Termination**

The agreement to operate in parallel may be terminated under the following conditions:

#### **9.1 By the Customer**

By providing written notice to the utility.

#### **9.2 By the utility**

If the Small Generating Facility fails to operate for any consecutive 12 month period or the Customer fails to remedy a violation of these Terms and Conditions.

#### **9.3 Permanent Disconnection**

In the event this Agreement is terminated, the utility shall have the right to disconnect its facilities or direct the Customer to disconnect its Small Generating Facility.

#### **9.4 Survival Rights**

This Agreement shall continue in effect after termination to the extent necessary to allow or require either Party to fulfill rights or obligations that arose under the Agreement.

### **10.0 Assignment/Transfer of Ownership of the Facility**

This Agreement shall survive the transfer of ownership of the Small Generating Facility to a new owner when the new owner agrees in writing to comply with the terms of this Agreement and so notifies the utility.

**3666. – 3699. [Reserved]**