

# **COLORADO DEPARTMENT OF REGULATORY AGENCIES**

## **Public Utilities Commission**

### **4 CODE OF COLORADO REGULATIONS (CCR) 723-3**

#### **PART 3 RULES REGULATING ELECTRIC UTILITIES**

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## **BASIS, PURPOSE, AND STATUTORY AUTHORITY.**

The basis and purpose of these rules is to describe the electric service to be provided by jurisdictional utilities and master meter operators to their customers; to designate the manner of regulation over such utilities and master meter operators; and to describe the services these utilities and master meter operators shall provide. In addition, these rules identify the specific provisions applicable to public utilities or other persons over which the Commission has limited jurisdiction. These rules address a wide variety of subject areas including, but not limited to, service interruption, meter testing and accuracy, safety, customer information, customer deposits, rate schedules and tariffs, discontinuance of service, master meter operations, flexible regulation, procedures for administering the Low-Income Energy Assistance Act, cost allocation between regulated and unregulated operations, recovery of costs, the acquisition of renewable energy, small power producers and cogeneration facilities, and appeals regarding local government land use decisions. The statutory authority for these rules can be found at §§ 29-20-108, 40-1-103.5, 40-2-108, 40-2-124(1), 40-2-124(2), 40-2-124(7), 40-3-102, 40-3-103, 40-3-104.3, 40-3-111, 40-3-114, 40-4-101, 40-4-106, 40-4-108, 40-4-109, 40-5-103, 40-8.7-105(5), 40-9.5-107(5), and 40-9.5-118, C.R.S.

## **GENERAL PROVISIONS**

### **3000. Scope and Applicability.**

- (a) Absent a specific statute, rule, or Commission Order which provides otherwise, all rules in this Part 3 (the 3000 series) shall apply to all jurisdictional electric utilities and electric master meter operators and to Commission proceedings concerning electric utilities or electric master meter operators providing electric service.
- (b) The following rules in this Part 3 shall apply to cooperative electric associations which have elected to exempt themselves from the Public Utilities Law pursuant to § 40-9.5-103, C.R.S.:
  - (I) Rules 3002 (a)(I), (a)(II), (a)(IV), (a)(V), (a)(XVI), (b), and (c) concerning the filing of applications for certificate of public convenience and necessity for franchise or service territory, for certificate amendments, to merge or transfer, or for appeals of local land use decisions.
  - (II) Rules 3005 (a)(III) (IV), (d), (e), (g), and (h) concerning records under RUS accounting system and preservation of records.

- (III) Rule 3006 (a) (b) (c) (d) and (e) concerning the filing of annual reports, designation for service of process, and election of applicability of Title 40, Article 8.5.
  - (IV) Rules 3008 (b) and (d) concerning incorporation by reference.
  - (V) Rules 3100 and 3103 concerning application for and amendment of a certificate of public convenience and necessity relating to a franchise.
  - (VI) Rules 3101 and 3103 concerning application for and amendment of a certificate of public convenience and necessity relating to service territory.
  - (VII) Rule 3104 concerning application to transfer assets, to obtain a controlling interest, or to merge with another entity.
  - (VIII) Rule 3204 concerning incidents occurring in connection with the operation of facilities.
  - (IX) Rule 3207 (a) and (b), concerning construction and expansion of distribution facilities.
  - (X) Rules 3250 through 3253 concerning major event reporting.
  - (XI) Rule 3411 concerning the Low-Income Energy Assistance Act unless the cooperative electric association has exempted themselves pursuant to rule 3411(c).
  - (XII) Rules 3650(b), 3651, 3652, 3654(b), (e) through (i), (k) and (m), 3659(a) through (c), (e) through (h), (j) through (n), 3660(i), 3661(b), (c), (g), and (i), 3662(b), (c)(l) through (c)(V), (c)(IX), (d), (g) and (h), and 3665 concerning the renewable energy standard.
  - (XIII) Rules 3700 through 3707 concerning appeals of local governmental land use decisions actions.
- (c) The following rules in this Part 3 shall apply to cooperative electric generation and transmission associations:
- (I) Rules 3002 (a)(III), (a)(XVI), (b), and (c) concerning the filing of applications for certificates of public convenience and necessity for facilities or for appeals of local land use decisions.
  - (II) Rule 3006(h) concerning the filing of least-cost planning reports.
  - (III) Rule 3102 concerning applications for certificates of public convenience and necessity for facilities.
  - (IV) Rule 3103 concerning amendments to certificates of public convenience and necessity for facilities.
  - (V) Rule 3104 concerning application to transfer, to obtain a controlling interest, or to merger with another entity.
  - (VI) Rule 3200 concerning construction, installation, maintenance, and operation of facilities.

- (VII) Rule 3204 concerning incidents occurring in connection with the operation of facilities.
  - (VIII) Rule 3205 concerning construction or expansion of generating capacity.
  - (IX) Rule 3206 concerning construction or extension of transmission facilities.
  - (X) Rule 3253(a) concerning major event reporting.
  - (XI) Rules 3602, 3605, and 3614(a) concerning least-cost resource planning.
  - (XII) Rules 3700 through 3707 concerning appeals of local governmental land use decisions actions.
- (d) The following rules in this Part 3 shall apply to municipally owned utilities, which are qualifying retail utilities:
- (I) Rules 3650(c), 3651, 3652, 3653, 3654(b), (e) through (i), (k) and (m), 3659(a) through (c), (e) through (h), (j) through (n) concerning the renewable energy standard.
- (e) The following rules in this Part 3 shall apply to municipally owned utilities which are not qualifying retail utilities:
- (I) Rule 3650(d) concerning the renewable energy standard.
- (f) The following rules in this Part 3 shall apply to municipally owned utilities serving 5,000 or more customers:
- (I) Rules 3650(e) and 3653(d).

## **RENEWABLE ENERGY STANDARD**

### **3650. Applicability.**

- (a) Rules 3650 to 3665 shall apply to all investor owned jurisdictional electric utilities in the state of Colorado that are subject to the Commission's regulatory authority.
- (b) Rules 3651, 3652, 3654(b), (e) through (i), (k) and (m), 3659(a) through (c), (e) through (h), (j) through (n), 3660(i), 3661(b), (c), (g), and (i), 3662(b), (c)(I) through (c)(V), (c)(IX), (d), (g) and (h), and 3665 shall apply to cooperative electric associations in the state of Colorado.
- (c) Rules 3651, 3652, 3653, 3654(b), (e) through (i), (k) and (m), 3659(a) through (c), (e) through (h), (j) through (n) shall apply to municipally owned electric utilities in the state of Colorado, which are QRUs.
- (d) The board of directors of each municipally owned electric utility 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 percent of eligible consumers participates in the election.

- (l) Within 45 days of the conclusion of any vote to be subject to these rules, the municipally owned electric utility shall provide written notification of the outcome of the vote to the Director of the Commission.
- (e) Rule 3653(d) shall apply to municipally owned utilities serving 5,000 or more customers.
- (f) Nothing in these rules is intended to expand the Commission's regulatory oversight and powers over municipally owned electric utilities or cooperative electric associations.

### **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 § 40-2-124, C.R.S.

Section 40-2-124, C.R.S., 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. Section 40-2-124 was further amended by the 2007 Colorado General Assembly by House Bill 07-1281. The 2008 Colorado General Assembly amended, by House Bill 08-1160, provisions of § 40-2-124, C.R.S. and added § 40-9.5-118, C.R.S. to cause the Commission's interconnection rules to apply to cooperative electric associations and to require that municipally owned electric utilities serving 5,000 or more customers adopt a "functionally similar" interconnection standard.

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 new technologies continue to create new opportunities to exploit Colorado's renewable energy resources.

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.

It is the policy of this State to encourage local ownership of renewable energy generation facilities to improve the financial stability of rural communities.

### **3652. Definitions.**

The following definitions apply only to rules 3650 – 3665. In the event of a conflict between these definitions and a statutory definition, the statutory definition shall apply.

- (a) "Annual compliance filing" means the report a QRU is required to file annually with the Commission pursuant to rule 3662 that provides information relating to the actions taken to comply with the Renewable Energy Standard including the costs and benefits of expenditures for renewable energy.

- (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) "Community-based project" means a project located in Colorado and: (a) that is owned by individual residents of a community, a local nonprofit organization, a cooperative, a local government entity, or a tribal council; (b) whose generating capacity does not exceed thirty megawatts; and (c) for which there is a resolution of support adopted by the local governing body of each local jurisdiction in which the project is to be located.
- (d) "Compliance year" means a calendar year for which the renewable energy standard is applicable.
- (e) "Eligible energy" means renewable energy and recycled energy.
- (f) "Eligible energy resources" are generation units that produce recycled energy or renewable energy. Fossil and nuclear fuels and their derivatives are not eligible energy resources. Pumped storage hydropower facilities are also not eligible energy resources.
- (g) "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.
- (h) "On-site solar system" or "customer-sited solar system" means a grid-connected 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 two MW and should be designed principally to serve the load of the end-use electric customer.

**Question for Comment:** Should the upper limit for net-metered systems be raised and, if so, to what? 5MW? 10MW? or no limit with the size being limited to a percentage of load?

- (i) "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.
- (j) "Planning period" means the beginning of the compliance year addressed in an annual compliance plan through the end of the resource acquisition period of an investor owned QRU's

electric resource plan approved under rule 3613 of the Commission's Electric Resource Planning Rules, 4 CCR 723-3-3600, *et seq.*

- (k) "Qualifying retail utility" or "QRU" means any provider of retail electric service in the state of Colorado other than municipally owned electric utilities that serve 40,000 customers or fewer.
- (l) "Recycled energy" means energy produced by a generation unit with a nameplate capacity of not more than fifteen megawatts that converts the otherwise lost energy from the heat from exhaust stacks or pipes to electricity and that does not combust additional fossil fuel. Recycled energy does not include energy produced by any system that uses energy, lost or otherwise, from a process whose primary purpose is the generation of electricity, including, without limitation, any process involving engine-driven generation or pumped hydroelectricity generation.
- (m) "Renewable energy" means energy generated from renewable energy resources.
- (n) "Renewable energy credit" or "REC" means a contractual right to the full set of non-energy attributes, including any and all credits; environmental, economic, and social benefits; emissions reductions; offsets; and allowances; howsoever entitled, directly attributable to a specific amount of electric energy generated from a renewable or other eligible energy resource. One REC results from one megawatt-hour of electric energy generated from an eligible energy resource. For the purposes of these rules, RECs include, but are not limited to, [SRECs](#) and [SORECs](#).
- (o) "Renewable energy credit contract" means a contract for the sale of renewable energy credits without the associated energy.
- (p) "Renewable energy resources" means generation units that produce electricity by means of the following energy sources: solar radiation, wind, geothermal, biomass, hydropower, and fuel cells using hydrogen derived from eligible energy resources. **Note two options below for the definition of hydropower.**

**Hydro Option 1:** 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. All hydropower resources must qualify as low-impact hydropower resources according to criteria established by the Low Impact Hydropower Institute (<http://lowimpacthydro.org/>).

**Hydro Option 2:** 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. All hydropower resources must: (1) operate as a run-of-river facility (*i.e.*, the facility releases water at the same rate as the natural flow of the river); (2) involve no new impoundments; (3) meet all applicable state and federal environmental standards.

- (q) "Renewable energy standard" means the electric resource standard for eligible renewable energy resources specified in § 40-2-124, C.R.S.
- (r) "Renewable energy supply contract" means a contract for the sale of renewable energy and the RECs associated with such renewable energy. If the contract is silent as to renewable energy

credits, the renewable energy credits will be deemed to be combined with the energy transferred under the contract.

- (s) “RES Program Administrator” means the person who carries out the administrative responsibilities related to the renewable energy standard.
- (t) “Solar electric generation technologies” means any technology that uses solar radiation energy to generate electricity.
- (u) “Solar on-site renewable energy credit” or “**SOREC**” means a REC created by an on-site solar system.
- (v) “Solar renewable energy credit” or “**SREC**” means a REC created by a solar renewable energy system. For the purposes of these rules, **SRECs** include, but are not limited to, **SORECs**.
- (w) “Solar renewable energy system” means a system that uses a solar electric generation technology to generate electricity.
- (x) “Standard rebate offer” or “SRO” means a standardized incentive program offered to retail electric service customers for on-site solar systems that do not exceed 100 kW per installation.
- (y) “Watt” means a unit of measure of alternating current electric power at a point in time, as capacity or demand. The International System of Units defines one watt as one joule per second, equal to the power dissipated in a circuit in which a current of one ampere flows across a potential difference of one volt.
- (z) “Western Renewable Energy Generation Information System” or “WREGIS” means the renewable energy certificate tracking and reporting system established by the California Energy Commission and the Western Governors’ Association and governed by the Western Electricity Coordinating Council for use by states and provinces throughout the western power interconnection.

**3653. Municipal Utilities.**

- (a) Each municipally owned QRU implementing a renewable energy standard substantially similar to the provisions of § 40-2-124, C.R.S., shall submit a statement to the Commission that demonstrates its renewable energy standard program, at a minimum, meets the following criteria:
  - (I) The eligible energy resources shall be limited to those identified in subsection § 40-2-124(1)(a);
  - (II) The percentage requirements shall be equal to or greater in the same years than those identified in subsection § 40-2-124(1)(c)(V) and counted in the manner allowed by rule 3654; 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.



- (b) The statement to be submitted by a municipally owned QRU is for information purposes only and is not subject to approval by the Commission. Upon filing of the certification statement, the municipally owned QRU shall have no further obligations under rule 3653(a).
- (c) Nothing in this section prohibits a municipally owned electric utility from buying and selling RECs.
- (d) Pursuant to § 40-2-124(7), C.R.S., each municipally owned utility that serves 5,000 customers or more shall adopt and post small generation interconnection standards and insurance requirements that are functionally similar to those established in rule 3665 except that the municipally owned utility may reduce or waive any of the insurance requirements.

**3654. Renewable Energy Standard.**

- (a) Each investor owned QRU shall generate or cause to be generated (through purchase or by providing rebates or other form of incentive) eligible energy in the following minimum amounts:
  - (I) Three percent of its retail electricity sales in Colorado for the compliance year 2007;
  - (II) Five percent of its retail electricity sales in Colorado for each of the compliance years 2008 through 2010;
  - (III) Ten percent of its retail electricity sales in Colorado for each of the compliance years 2011 through 2014;
  - (IV) Fifteen percent of its retail electricity sales in Colorado for each of the compliance years 2015 through 2019; and
  - (V) Twenty percent of its retail electricity sales in Colorado for each of the compliance years beginning in 2020 and continuing thereafter.
- (b) Each cooperative electric association QRU and municipally owned QRU shall generate or cause to be generated eligible energy in the following minimum amounts:
  - (I) One percent of its retail electricity sales in Colorado for each of the compliance years 2008 through 2010;
  - (II) Three percent of its retail electricity sales in Colorado for each of the compliance years 2011 through 2014;
  - (III) Six percent of its retail electricity sales in Colorado for each of the compliance years 2015 through 2019; and
  - (IV) Ten percent of its retail electricity sales in Colorado for each of the compliance years beginning in 2020 and continuing thereafter.
- (c) For municipal utilities that become a municipally owned QRUs after December 31, 2006, the minimum percentage requirements of eligible energy shall begin in the first calendar year following qualification as follows:

- (I) Years one through three: One percent of retail electricity sales;
  - (II) Years four through seven: Three percent of retail electricity sales;
  - (III) Years eight through twelve: Six percent of retail electricity sales; and
  - (IV) Years thirteen and thereafter: Ten percent of retail electricity sales.
- (d) Of the eligible renewable energy amounts specified in rule 3654(a), each investor owned QRU shall derive at least four percent (4%) 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

**Question for Comment:** Should the Commission adopt a larger distributed generation (DG) set aside (perhaps 5%) to encourage and allow for net metering of other technologies such as small wind?

- (e) For purposes of compliance with the renewable energy standard specified in rules 3654(b) and (c), for cooperative electric association QRUs and municipal QRUs, each kilowatt-hour of eligible energy generated from solar electric generation technology shall be counted as 3.0 kilowatt-hours of eligible energy, provided that the solar electric generation technology commenced producing electricity prior to July 1, 2015. For solar electric generation technology that commenced producing electricity on or after July 1, 2015, each kilowatt-hour of eligible energy generated from solar electric generation technology shall be counted as 1.0 kilowatt-hours of eligible energy for compliance purposes.
- (f) For purposes of compliance with the renewable energy standard, each kilowatt-hour of eligible energy generated in Colorado shall be counted as 1.25 kilowatt-hours of eligible energy.
- (g) For purposes of compliance with the renewable energy standard, each kilowatt-hour of eligible energy generated from a community-based project shall be counted as 1.5 kilowatt-hours of eligible energy. Such a multiplier shall only apply to the portion of the generation attributable to a community-based project as defined in rule 3652(c), such that the remaining ownership portion not held by a community-based entity will receive the 1.25 REC multiplier. As the ownership percentages may change over the life of a contract, such multipliers shall change accordingly. Such ownership changes shall pro rate the multiplier based on the number of days under each ownership. Verification and monitoring of ownership structures relating to community-based projects shall be the responsibility of the QRU that counts the eligible energy or RECs associated with such projects toward compliance with the renewable energy standards.
- (h) For purposes of compliance with the renewable energy standard, each kilowatt-hour of eligible energy may take advantage of only one of the compliance multipliers in rules 3654(e), (f) or (g).
- (i) For purposes of compliance with the renewable energy standard, a QRU may generate, or cause to be generated, and count for compliance in a compliance year:
- (I) Eligible energy or RECs generated during the compliance year;
  - (II) Eligible energy or RECs generated during the last six months of the year immediately preceding the compliance year, provided that such RECs exceed the RECs required for compliance in the year generated;

- (III) Eligible energy or RECs generated during the first three months of the year following the compliance year. This time period may be thought of as a true-up period.
  - (IV) Eligible energy generated on or after January 1, 2004 but before the adoption of these rules may be counted for compliance with this renewable energy standard; however the RECs associated with all such eligible energy shall expire at the end of the fifth calendar year following the calendar year during which it was generated. Eligible 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.
- (j) Not less than eighty percent (80%) of the nonsolar RECs and eighty percent (80%) of the SRECs required for compliance with this renewable energy standard in any compliance year must either be generated in Colorado or be associated with eligible energy delivered into Colorado to serve Colorado load. For not more than twenty percent (20%) of the required eligible energy or RECs, a QRU may substitute the equivalent unbundled RECs, SRECs, or SORECs generated by eligible energy resources subject to the following qualifications:
- (I) The timing of their generation comports with the generation requirements in sections (i)(I) through (i)(IV) of this rule,
  - (II) The resources are located within the Western Electric Coordinating Council (WECC) territory, and
  - (III) The RECs or SRECs are recorded in the WREGIS database.

**Question for Comment:** Should the rule above apply to all Colorado QRUs?

- (k) For the 2007 and 2008 compliance years, a QRU may borrow eligible energy generated during the following compliance year. Any borrowed eligible energy used for compliance in this manner must be made up by actual eligible energy generated during the subsequent compliance year.
- (l) For the first two compliance years, 2007 and 2008, no administrative penalties shall be assessed against an investor owned 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.
- (m) For purposes of compliance with this renewable energy standard, there shall be no “double counting” of renewable energy or RECs. Notwithstanding the foregoing, eligible 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.
- (n) RECs associated with eligible energy sold by the QRU under an optional renewable energy pricing program are considered to accrue to the program’s subscribers and may not be counted by the QRU toward compliance with the renewable energy standard.
- (o) RECs associated with eligible energy that is generated in and exported out of Colorado shall accrue to the purchaser of the eligible energy and may not be used for compliance with this

renewable energy standard, unless the purchase contract for such eligible energy otherwise states that the RECs will be retained by the generator.

- (p) 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 (*i.e.*, cofiring), a QRU may count as eligible renewable energy only the proportion of the total electric output of the generation system that results from the use of eligible renewable energy resources. For the cofired generation to count toward the renewable standard, the renewable fuel must account for not less than five percent (5%) of the electrical output of the combined system.

**Question for Comment:** Should approval for the method of calculation be by application to the Commission or should it be established by the Commission's RES Program Administrator subject to Commission approval? See the two options below:

Option 1: The QRU may seek expedited Commission approval of a method of calculation to determine the proportion of eligible renewable energy from the cofired generation system that is proposed jointly by the QRU and the Commission's RES Program Administrator.

Option 2: Subject to Commission approval, the RES Program Administrator shall establish the method(s) of calculation that a QRU may use to determine the proportion of eligible renewable energy from a cofired system.

**[Note to readers:** A suggested approach for biomass cofiring can be found in Federal Technology Alert DOE/EE-0288, Biomass Cofiring in Coal-Fired Boilers (May 2004) which could represent a Commission approved method.]

The QRU shall otherwise include in its annual compliance filing the method of calculation it plans to use to determine the proportion of eligible renewable energy from the cofired generation system.

- (q) 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 acquire eligible energy and RECs in the most cost-effective manner. To this end, the investor owned QRU shall normally use a competitive acquisition process for acquiring eligible energy and RECs, with the exception renewable energy from solar electric generation technologies with nameplate ratings of 100 kW or less. The investor owned QRU shall acquire eligible energy from eligible energy resources with nameplate ratings of greater than thirty megawatts pursuant to the Commission's Electric Resource Planning Rules, 4 CCR 723-3-3600, *et seq.* The investor owned QRU shall acquire all eligible energy from eligible energy resources with nameplate ratings that do not exceed thirty megawatts, including all on-site solar systems, in accordance with a Commission-approved annual compliance filing and this rule 3655.
- (b) A QRU may conduct, in its discretion, separate solicitations or stratified solicitations, for any of the following:

- (I) Renewable energy from on-site solar systems;
- (II) Renewable energy from solar energy systems that do not exceed 30 MW and that are not on-site solar systems;
- (III) Renewable energy from non-solar resources that do not exceed 30 MW such as wind, geothermal, biomass, hydropower, and fuel cells;
- (IV) Renewable energy credits (RECs);
- (V) Solar renewable energy credits (SRECs); and
- (VI) Solar on-site renewable energy credits (SORECs).(c) Each competitive solicitation pursuant to this rule 3655 shall take into account:
  - (I) The retail rate impact, and
  - (II) The estimated number of SORECs procured under and expected to be procured under the standing standard rebate offer.
- (d) All contracts between a QRU and third party seller for the acquisition of eligible energy resources shall have a minimum term of twenty years; except that the contract term may be shortened at the sole discretion of the seller. All contracts for the acquisition of SORECs shall have a minimum term of twenty years.
- (e) In the event that the investor owned QRU intends to acquire eligible energy under this rule 3655, the QRU shall provide in its annual compliance filing: the evaluation criteria the QRU plans to use in ranking the bids and proposals for eligible energy, eligible energy resources, and RECs; reasonable estimates of transmission costs for eligible energy resources located in different areas, and; any other information necessary to implement a fair and reasonable competitive acquisition process.
- (f) If the investor owned QRU intends to accept proposals for eligible energy or eligible energy resources from the QRU or from an affiliate of the QRU as part of a competitive acquisition process under this rule 3655, it shall include in its annual compliance filing 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. 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. 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.

- (g) Responses to a competitive acquisition process under this rule 3655 shall be evaluated and ranked by the investor owned QRU.
  - (I) In addition to the cost of the renewable energy and RECs, the QRU may take into consideration the characteristics of the underlying eligible energy resource that may impact the ability of the bidder to fulfill the terms of the bid including, but not limited to project in-service date, resource 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 QRU determines is relevant to the QRU's needs.
  - (II) A QRU is not required to accept any bid and may reject any and all bids offered for good cause. However, each solicitation shall culminate in a report detailing the outcome of the solicitation and identifying which bids were selected, which were rejected, and why.
  - (III) Within 15 days of the receipt of bids to a competitive acquisition process under this rule 3655, the investor owned QRU shall notify respondents as to whether their bid has met the bid submission criteria.
  - (IV) Upon ranking of eligible bids, each investor owned QRU shall within 15 days indicate to all respondents with which proposals it intends to pursue a contract.

**3656. Environmental Impacts.**

- (a) Eligible energy resources must meet all applicable federal, state, and local environmental permitting requirements
- (b) For eligible energy resources larger than two MW or with any wind turbine 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. This documentation shall be made publicly available.
- (c) For eligible energy resources larger than two MW or with any wind turbine structures extending over 50 feet in height, the QRU renewable energy supply contract shall require project developers to certify, as a condition precedent to achieving commercial operation, that the developer has performed and made publicly available site specific avian and other wildlife surveys conducted on the facility's site prior to construction. The developer shall further certify that the developer used the results of these surveys 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. Renewable Energy Standard Program Administration.**

The goal of the RES Program Administrator will be to more efficiently administer the routine, day-to-day details of implementing the renewable energy standard.

- (a) A member of the Commission's Staff shall be designated as the Commission's RES Program Administrator and shall be charged with specific responsibilities associated with these rules, including but not limited to:
  - (I) Overall administration of the RES program including, but not limited to, certifying eligible energy facilities for compliance with the RES, evaluating QRU reports and plans, administering incentive programs under Commission jurisdiction, and qualifying third-party developers as discussed in rule 3666.
  - (II) Administering the state administrator account in WREGIS on behalf of the Commission
  - (III) Facilitating the resolution of disputes between investor owned QRUs, end-use customers and third-party developers concerning net metered systems.

**Questions for Comment:** Commission vs Third-Party Administration of Customer-Sited and Net-Metering Programs as an additional function of the RES Program Administrator.

Should the Commission's RES Program Administration, via either its internal administrator or a third-party contractor administer the customer-sited solar and net metering programs (including the Standard Rebate Offer) for customers served by investor owned QRUs in which the Commission or its designee would distribute the standard offer rebate for on-site solar installations? Would such a Commission- or third-party-administered net metering program replace or complement the investor owned QRU's Standard Rebate Offer Program, § 40-2-124(1)(e), C.R.S.?

Should a Commission- or third-party-administered net metering program be funded using a new system benefits charge? Would such charge be separate from or a component of the investor owned QRU's RESA? How would such a charge be accounted for in the determination of the retail rate impact (*i.e.*, the 2% cap)? What are the implications of the collection of funds by the QRU for disbursement by the Commission relative to state fiscal rules and state laws (*e.g.*, are there TABOR implications)? Would new legislation be required?

**3658. Standard Rebate Offer (SRO).**

**Question for Comment:** See the immediately preceding discussion concerning Commission administration of customer-sited programs, including this Standard Rebate Offer. Commission administration could largely replace or be in addition to the utility programs identified in the present rules as shown below.

- (a) Each investor owned 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. At the QRU's option, the standard rebate offer may be paid based upon the direct current (DC) watts produced by the on-site solar systems. Any **SORECs** acquired by the QRU pursuant to such SRO program, regardless of whether the associated renewable energy is specifically metered or based on engineering estimates without specific metering, may be counted by the QRU for purposes of compliance with the renewable energy standard in accordance with rule 3654. **SORECs** acquired in advance of their actual generation under an SRO must be amortized over the life of the contract.

- (b) The standard rebate offer of the investor owned QRUs 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 **SORECs** 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 **SOREC** 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 **SORECs** 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 ten 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 **SORECs** contracted to be transferred from the customer to the QRU. Any customer that receives the rebate payment and one-time **SOREC** payment under this program shall not be entitled to any other compensation for the **SORECs** 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 ten 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 **SORECs** contracted to be transferred from the customer to the QRU. Such **SORECs** 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 ten 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 ten percent.
- (XI) The level of **SOREC** payments for systems of ten 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 by contracts or through a system of tradable renewable energy credits, exchanges, or brokers may also be used by QRUs to comply with this standard pursuant to rule 3654.
- (b) In calculating compliance, the total RECs acquired from eligible energy resources during a compliance year may include:
  - (I) RECs generated by eligible energy resources owned by the QRU or by a QRU affiliate;
  - (II) RECs acquired by the QRU pursuant to renewable energy supply contracts;
  - (III) RECs acquired by the QRU pursuant to renewable energy credit contracts;
  - (IV) RECs acquired by the QRU pursuant to a standard offer program;
  - (V) RECs acquired through a system of tradable renewable energy credits, from exchanges or from brokers;
  - (VI) RECs carried over from the last six months of the previous compliance year or borrowed from the first three months of the following compliance year, pursuant to rules 3654(i)(I) through (III);
  - (VII) For the 2007 and 2008 compliance years, RECs borrowed from future compliance years, pursuant to rule 3654(k).
- (c) RECs representing electricity generated at eligible energy resources shall be counted for compliance purposes consistent with the compliance multipliers in rule 3654(e), (f), and (g).

- (d) An investor owned QRU may own and use for compliance with the renewable energy standard RECs generated by eligible energy resources that the Commission has designated as new energy technologies or demonstration projects under § 40-2-123(1), C.R.S., and that are therefore not subject to the retail rate impact established in rule 3661.
- (e) Subject to the maximum retail rate impact in rule 3661, the QRU shall have the discretion to determine, in a nondiscriminatory manner, the price it will pay for SORECs from facilities that are no larger than one hundred kilowatts.
- (f) All contracts between QRUs and the owners of eligible energy resources entered into after the effective day of these rules shall clearly specify the entity who shall own the RECs associated with the energy generated by the facility.
- (g) RECs shall generally be used for a single purpose only, and shall be retired upon use for that designated purpose.
- (h) All RECs 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 be counted simultaneously toward compliance with a federal renewable portfolio standard and with the renewable energy standard.
- (i) Carbon dioxide and other greenhouse gas emissions reductions resulting from the generation of eligible energy or by the acquisition of RECs may be simultaneously counted as greenhouse gas emissions reductions by the QRU to comply with greenhouse emissions standards, regulations, or laws in effect from time to time.
- (j) An investor owned QRU may not count greenhouse gas emissions reductions resulting from a REC generated by an acquired eligible energy resource or from the acquisition of a REC in the event that the REC expires, is sold, or is otherwise exchanged with any other party. An investor owned QRU shall be prohibited from selling or otherwise exchanging with any other party a REC either generated by eligible energy resources owned by the QRU or by a QRU affiliate or acquired by the QRU pursuant to renewable energy supply contracts, to renewable energy credit contracts, to a standard offer program, or through a system of tradable renewable energy credits, from exchanges or from brokers, absent a Commission finding in a written decision that the investor owned QRU is in compliance with greenhouse emissions standards, regulations, or laws in effect from time to time and that such a sale is in the public interest. In the event that the Commission allows an investor owned QRU to engage in the sale of RECs, the QRU shall apply for the inclusion of any losses or gains from such sales through an appropriate rate mechanism.
- (k) RECs may not be disaggregated into their various components or environmental attributes (e.g., direct or indirect reductions in emissions). If a REC is sold, the seller may not separately sell, retire, or otherwise make claims to the associated environmental attributes of the REC. If a REC expires or is retired for compliance purposes, all associated environmental attributes of the REC

are likewise expired or retired. If a specific attribute or offset attributable to a REC is sold or retired, the entire REC is deemed to be transferred or retired for compliance purposes.

- (l) RECs that are generated with fuel cell energy using hydrogen derived from an eligible 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.
- (m) If a renewable energy system uses an eligible energy resource in combination with a nonrenewable 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 energy resources shall be eligible to count toward compliance with the renewable energy standard.
- (n) The Western Renewable Energy Generation Information System (WREGIS) shall serve as the central database for tracking all of an investor owned QRU's eligible energy generation and all of its purchase and sale transactions of RECs. Investor owned QRUs shall maintain generator accounts in WREGIS and shall submit to the Commission monthly reports identifying by generator account and REC serial number for all purchase and sale transactions of RECs.

**Questions for Comment:** WREGIS

Should all Colorado QRUs use WREGIS? Does the Commission have the statutory authority to require co-ops and municipalities to use WREGIS?

Should the Commission require all eligible energy facilities in Colorado greater than 2 MW in nameplate capacity to maintain a current generator account in WREGIS?

**3660. Cost Recovery and Incentives.**

**[Note: This version of rule 3660 assumes that the QRU collects and expends RESA funds. If the administration of the RES is transferred to an administrator as described elsewhere in this document, a different mechanism for collecting and spending RESA funds will be required.]**

- (a) The investor owned QRU shall be entitled to timely cost recovery through retail rate mechanisms for all funds prudently expended to comply with the renewable energy standard, including the costs the QRU incurs to administer the standard rebate offer and the costs to acquire eligible energy and RECs as allowed under the retail rate impact.
- (b) The investor owned QRU may propose a retail rate mechanism to fund the incremental costs of eligible energy resources and purchased eligible energy, as well as to fund the purchase of RECs, to fund program and administrative costs, and to account for revenues from wholesale customers. Such a retail rate mechanism shall not exceed the net retail rate impact as determined under rule 3661. The QRU may carry forward, with interest, funds collected through such mechanism to acquire eligible energy resources, purchase eligible energy, or acquire RECs in accordance with an annual compliance filing approved by the Commission under rule 3662 or, for acquisitions of eligible energy from facilities greater than 30 MW, an electric resource plan approved by the Commission under rule 3613 of the Commission's Electric Resource Planning

Rules, 4 CCR 723-3-3600, *et seq.* The interest rate shall be at the Commission's customer deposit interest rate at the time of the rider.(c) If the investor owned QRU incurs costs in acquiring eligible 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 not increase the amounts that a QRU may charge customers under the retail rate impact rule.

- (d) The investor owned QRU shall be entitled to earn an extra profit on the QRU's ownership investment in a specific eligible energy resource if that eligible 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 percent of the 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.
  - (I) For the purposes of this rule 3660, net economic benefit shall mean that the specific eligible 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 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) In its analysis of net economic benefit, the QRU shall use the same methodologies and assumptions it used in its most recently approved electric resource plan, except as otherwise approved by the Commission. Confidential information may be protected in accordance with rules 1100 through 1102 of the Commission's Rules of Practice and Procedure.
  - (III) Any net economic benefit for which the QRU qualifies to receive a bonus shall be included in the calculation of the retail rate impact rule pursuant to rule 3661.
- (e) An investor owned QRU may propose to develop and own, in whole or in part, a new eligible energy resource by filing an application with the Commission. The Commission may set the matter for hearing, if appropriate, under the Commission's Rules of Practice and Procedure. For the purpose of this rule 3660(e):
  - (I) A QRU shall be allowed to develop and own as utility rate-based property, without being required to comply with the competitive bidding requirements in rule 3655, up to twenty-five percent of the total new eligible energy resources that the QRU acquires from entering into power purchase agreements and from developing and owning resources after March 27, 2007 if the Commission determines that the QRU-owned new eligible energy resource can be constructed at a reasonable cost compared to the cost of similar eligible energy resources available in the market.

- (II) A QRU shall be allowed to develop and own as utility rate-based property, without being required to comply with the competitive bidding requirements in rule 3655, up to fifty percent of the total new eligible energy resources that the QRU acquires from entering into power purchase agreements and from developing and owning resources after March 27, 2007 if the Commission determines that the QRU-owned new eligible energy resource can be constructed at a reasonable cost compared to the cost of similar eligible energy resources available in the market and that the proposed new eligible energy resource would provide significant economic development, employment, energy security, or other benefits to the state of Colorado.
- (III) The QRU shall be allowed to develop and own as utility rate-based property more than the percentages of total new eligible energy resources set forth in rules 3660(e)(I) and (e)(II), if the QRU bids to own the new eligible energy resources in a competitive solicitation and is selected as a winning bidder in that competitive solicitation.
- (IV) The QRU may develop and own new eligible energy resources either solely or jointly with other owners. If the QRU owns the new eligible energy resource jointly, the entire jointly owned resource shall count toward the percentage limitations set forth in rule 3660(e). For purposes of this rule, participation by any parent, affiliate or subsidiary of a QRU in a QRU's owned new eligible energy resource shall count towards the percentage limitations. The QRU's rate base portion of any new eligible energy resource is limited to only the QRU's ownership percentage in the new eligible energy resource.
- (V) If the QRU intends to develop and own new eligible energy resources as provided for under rule 3660(e)(I) or (e)(II), it shall propose for Commission approval, in advance of filing its application under this rule, the name of the independent evaluator whom the utility intends to hire to conduct an assessment of whether the proposed new eligible energy resources can be constructed at a reasonable cost compared to the cost of similar eligible energy resources available in the market. The independent evaluator will develop a report to the Commission on its assessment of whether the proposed new eligible energy resources can be constructed at a reasonable cost compared to the cost of similar eligible energy resources available in the market. The independent evaluator 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 evaluator 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 evaluator under these rules. The independent evaluator shall not participate in, or advise the utility with respect to, any decisions relating to the proposed new eligible energy resource. The utility shall conduct any additional modeling requested by the independent evaluator to test the assumptions and results of the cost analyses. The independent evaluator's report shall be filed with the utility's application for approval of the proposed new eligible energy resource. The evaluator's report shall contain the evaluator's views on whether the proposed new eligible energy project can be constructed at a reasonable cost compared to the cost of similar eligible energy resources available in the market.
- (VI) Nothing in rule 3660(e) shall prevent the Commission from waiving, repealing, or revising any Commission rule in a manner otherwise consistent with applicable law.



- (f) When an investor owned QRU applies for a certificate of public convenience and necessity, the Commission shall consider rate recovery mechanisms that provide for earlier and timely recovery of costs prudently and reasonably incurred by the QRU in developing, constructing, and operating the eligible energy resource, including: (a) rate adjustment clauses until the costs of the eligible energy resource can be included in the utility's base rates; and (b) a current return on the utility's capital expenditures during construction at the utility's weighted average cost of capital, including its cost of debt and its most recently authorized rate of return on equity, during the construction, startup, and operation phases of the eligible energy resource.
- (g) .
- (h) If the investor owned 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 energy resource.
- (i) Each wholesale energy provider shall offer to its wholesale customers that are cooperative electric associations the opportunity to purchase their load ratio share of the wholesale energy provider's electricity from eligible energy resources. If a wholesale customer agrees to pay the full costs associated with the acquisition of eligible energy resources and associated renewable energy credits by its wholesale provider by providing notice of its intent to pay the full costs within sixty days after the wholesale provider extends the offer, 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.
- (j) Amounts collected by an investor owned QRU from wholesale customers shall be credited against base rate revenue requirements for QRU-owned eligible energy resources, against purchased energy revenue requirements for eligible energy purchased from other utilities or non-utilities, and against revenue requirements associated with program administration.

**3661. Retail Rate Impact.**

- (a) The net retail rate impact of actions taken by an investor owned QRU to comply with the renewable energy standard shall not exceed two percent of the total electric bill annually for each customer of that QRU.
- (b) The net retail rate impact of actions taken by a cooperative electric association 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.
- (c) The net retail rate impact shall include the prudently incurred direct and indirect costs of all actions by a QRU to meet the renewable energy standard or otherwise acquire eligible energy and RECs after March 27, 2007, including, but not limited to, program administration, rebates and performance-based incentives, payments under renewable energy supply contracts, payments under renewable energy credit contracts, payments made for RECs purchased through brokers or exchanges, computer modeling and analysis time, and QRU investment in and return on investment for eligible energy resources.

- (d) 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.
- (e) For purposes of calculating the retail rate impact, the investor owned QRU shall use the same methodologies and assumptions used in its most recently approved electric resource plan, unless otherwise approved by the Commission. In the event that the Commission orders the QRU to examine resource planning scenarios associated with its electric resource plan using alternative assumptions and parameters, the QRU shall provide a recalculated retail rate impacts according to such alternative assumptions and parameters.
- (f) In its annual compliance filing under rule 3662, the investor owned QRU shall estimate the retail rate impact of its plan to acquire eligible energy resources during the planning period as defined by rule 3652(j) and shall submit a report detailing the development of the retail rate impact estimate. The compliance filing shall identify the funds that must be made available to the QRU to comply with the renewable energy standard and separately identify the monies needed, subject to the maximum 2 percent rate impact limitation, to fund any QRU plan to exceed the renewable energy standard. The Commission will approve the investor owned QRU's budget for acquiring eligible energy during the planning period based on this analysis of the retail rate impact.
- (g) The retail rate impact shall be determined net of new alternative sources of electricity supply from non-eligible energy resources that are reasonably available at the time of the determination.
- (h) The basic method for an investor owned QRU to estimate of the retail rate impact in an annual compliance filing is as follows:
  - (I) The QRU shall determine its existing generation resources from the beginning of the immediately following compliance year through the end of the planning period. Existing generation resources shall include all QRU-owned generating facilities for which the QRU has received a CPCN from the Commission pursuant to § 40-5-101, C.R.S., at the time the QRU files its annual compliance filing under rule 3662, and existing or future purchases from other utilities or non-utilities pursuant to agreements effective at the time its annual compliance filing is submitted to the Commission. The QRU's capacity and energy requirements over the planning period shall be the same as the resource need specifically approved or modified under rule 3613 of the Commission's Electric Resource Planning Rules.
  - (II) The QRU shall identify all eligible energy resources from which the QRU has acquired eligible energy after March 27, 2007 and all eligible energy resources from which it plans to acquire eligible energy through the planning period. Such eligible energy resources shall define the "RES" resources. For the purpose of determining the retail rate impact under this rule, the following shall not be identified as RES resources: (1) eligible energy and eligible energy resources acquired pursuant to a competitive acquisition process approved by the Commission prior to March 27, 2007 and (2) eligible energy and eligible energy resources acquired pursuant to a Commission-approved electric resource plan as new energy technologies or demonstration projects under § 40-2-123, C.R.S.
  - (III) For each RES resource identified under rule 3661(h)(II) that is 2 MW or greater, the QRU shall propose a specific new alternative source of electricity supply from non-eligible



energy resources that could reasonably provide the same capacity and electric energy. The QRU shall aggregate all other eligible energy resources identified under rule 3661(h)(II) and propose a specific new alternative source of electricity supply from non-eligible energy resources that could reasonably provide the same capacity and electric energy as the aggregated RES resources. The sum of all resources proposed under this rule shall define the "NoRES" resources.

- (IV) The QRU shall calculate the difference, expressed as RES – NoRES, in the estimated costs between the matched RES and NoRES resources, taking into account any exceptional externality benefits from the eligible energy resources, as approved by the Commission. The QRU shall sum all such differences to calculate the estimated annual net retail rate impact for each year of the planning period. The positive sum of said differences each for year during the planning period shall reflect the incremental costs of eligible energy resources and purchased eligible energy under rule 3660(b). Such incremental costs when combined with the costs of the QRU's planned annual REC purchases and projected administrative and general expenses, as offset by projected revenue credits from wholesale customers, shall define the calculated net retail rate impact and shall not exceed 2 percent (2%) of the QRU's retail customers' annual bills.
  - (V) To the extent the calculated net retail rate impact exceeds the maximum retail rate impact in any year during the planning period defined by rule 3652(j), the QRU shall propose to modify its plans and actions to acquire new eligible energy during the planning period so as not to exceed the maximum retail rate impact. The QRU shall set forth such proposed modifications either in an annual compliance filing for eligible energy to be acquired under rule 3655 or in an application to amend the contents of an approved electric resource plan under rule 3615 of the Commission's Electric Resource Planning Rules.
- (i) If the retail rate impact does not exceed the maximum percent level, a QRU may acquire more than the minimum amount of eligible energy resources and RECs required under the renewable energy standard.3662. Annual Compliance Filing.

**[Note to readers:** In this rule, we now condense the Compliance Report previously required under this rule 3662 and the Compliance Plan, previously required under rule 3657, into one filing. The report will place increased emphasis on verification of the claimed generation which must now be documented by the tracking numbers of the RECs being retired. What was previously the Compliance Plan will now be a section at the end of the report describing current and future activities intended to ensure compliance during the planning period.

- (a) Each investor owned QRU shall make an annual compliance filing by application on or before March 31 that contains a report on the status of its compliance with the renewable energy standard for the most recently completed compliance year and a proposed plan for acquiring eligible energy, eligible energy resources, and RECs during the planning period defined by rule 3652(j). The compliance report in the annual compliance filing shall conform to the requirements in rules 3662(c) through (g). The compliance plan in the annual compliance filing shall conform to the requirements in rules 3662 (i).
- (b) Each cooperative electric association QRU shall file with the Commission an annual compliance filing that conforms to the reporting requirements in Rule 3662(c)(I) through (V) and (IX), (d), (g), and (h).

- (c) 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 energy required for compliance with each component of the renewable energy standard;
  - (II) The sources and amounts of eligible energy acquired by the QRU and the RECs acquired by the QRU during the compliance year for each component of the renewable energy standard. The QRU shall separately identify amounts of eligible energy by each type of resource;
  - (III) The sources and amounts of eligible energy and the RECs the QRU has counted toward compliance with each component of the renewable energy standard in the compliance year. The QRU shall separately identify the energy and RECs carried over from the last six months of the prior year and the energy and RECs from the 3-month true-up period of the following year;
  - (IV) The total amount of renewable energy or RECs acquired by the QRU during the compliance year pursuant to a standard rebate offer program and all other components of the QRU's on-site solar programs;
  - (V) Whether the QRU has invested in any eligible energy resource and whether that resource is under construction or in operation;
  - (VI) Documentation of the serial numbers and sources of all RECs retired for compliance;
  - (VII) The sources and amounts of eligible energy the QRU has acquired in the compliance year that the QRU proposes to carry over under rule 3654(i)(II) to the next compliance year;
  - (VIII) Documentation showing all REC purchase and sale transactions during the compliance year; and,
  - (IX) The funds expended and the retail rate impact of the eligible energy and RECs acquired. The retail rate impact cap shall be recalculated based on the actual compliance year values if the QRU developed the retail rate impact cap pursuant to rule 3661. To the extent the recalculation of the retail rate impact cap demonstrates that additional funds are available based on actual compliance year values, the QRU shall use those additional funds to acquire RECs, to the extent necessary, to achieve the compliance levels set forth in rule 3654 or until the additional funds have been spent if the QRU intends to claim that the retail rate impact cap prevented it from achieving compliance with the standard.
  - (X) A description of the method used to develop the retail rate impact calculation.
- (d) In the annual compliance report, the QRU must explain whether it achieved compliance with each component of the renewable energy standard during the most recently completed compliance year, or explain why the QRU had difficulty meeting the renewable energy standard.

- (e) 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 investor owned QRU from any administrative fine or other administrative action.
- (f) If the QRU asserts that the renewable energy standard was not met due to the retail rate impact, it will have the burden of proof that it failed to comply with the solar, on-site solar and non-solar components of its renewable energy standard during the most recently completed compliance year because of the retail rate impact.
- (g) On the same date that the QRU files its annual compliance filing, the QRU shall post an electronic copy of its annual compliance filing excluding confidential material on its website to facilitate public access and review.
- (h) On the same date that the QRU files its annual compliance filing, 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 filing on the Commission's website in order to facilitate public review.
- (i) Each investor owned QRU shall include in its annual compliance filing its proposed plan detailing how the QRU intends to comply with these rules during the planning period defined by rule 3652(j). The proposed plan shall include the following:
  - (I) The retail rate impact calculated pursuant to rule 3661;
  - (II) Estimates of the QRU's retail electricity sales through the planning period;
  - (III) Estimates of the eligible energy that the QRU already has acquired and the additional eligible energy that will be needed during the planning period to meet the renewable energy standards;
  - (IV) The funds that the QRU will have available to generate, or cause to be generated, eligible energy under the retail rate impact rule during the planning period;
  - (V) The QRU's plan to acquire during the planning period additional eligible energy, including the allocation of the funds available under the retail rate impact rule to acquire eligible 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 eligible energy;
  - (VI) The QRU's proposed standard rebate offer for the next compliance year and the QRU's estimate of the eligible energy that will be acquired under the standard rebate offer during the planning period;
  - (VII) A description of how the QRU is responding to customers participating in the standard rebate offer program, including an analysis of the time elapsed between the application process and when the photovoltaic system commences generation.

- (VIII) The specific information associated with the QRU's proposed competitive acquisition of eligible energy, eligible energy resources, or RECs as required by rule 3655(d).
- (IX) The treatment, tracking, counting, purchases and retirement of RECs, pursuant to rule 3659;
- (X) The total new eligible energy resources that the QRU has acquired from entering into purchase power agreements and from developing and owning resources after March 27, 2007, including a statement whether each new QRU-owned resources was acquired either as a winning bidder to a competitive solicitation or without being required to comply with competitive bidding requirements;
- (XI) The net metering for renewable energy resources, pursuant to rule 3664; and
- (XII) The interconnection of renewable energy resources, pursuant to rule 3665.

**3663. Compliance Filing Review.**

- (a) Upon review of the investor owned QRU's annual compliance filing, the Commission will issue an order:
  - (I) Approving the compliance plan as set forth in its annual compliance filing or ordering modifications to the compliance plan. Once approved by the Commission, the investor owned QRU shall implement its compliance plan. The investor owned QRU may apply to the Commission at any time for approval of amendments to an approved compliance plan; and,
  - (II) Stating whether the QRU complied with the components of its renewable energy standard during the most recently completed compliance year.
- (b) If the Commission determines that the investor owned 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, the Commission shall determine what, if any, administrative penalties should be assessed against the QRU for its failure to meet the renewable energy standard. In assessing penalties, the Commission may take one or more of the following actions:
  - (I) Option 1: 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 assess all or part of this amount as part of an administrative penalty.  
  
Option 2: Develop an alternative compliance payment (ACP) representing a standard amount the QRU would pay for each MWh short.
  - (II) No administrative penalties shall be assessed against a QRU if the amount of the shortfall is attributable to the retail rate impact limit.
  - (III) Assess no administrative penalties against a QRU if the failure to meet the renewable energy standard results from events beyond the reasonable control of the QRU that could

not have been reasonably mitigated including, but not limited to, failures to perform by counterparties to renewable energy supply contracts and renewable energy credit contracts, events that delay the construction or commercial operation of QRU-owned eligible renewable energy resources, and lack of customer interest in the standard rebate offer.

- (IV) The cost of such administrative penalties shall not be recovered from retail customers through the QRU's rates.

**3664. Net Metering.**

- (a) All investor owned QRUs shall allow the customer's retail electricity consumption to be offset by the electricity generated from eligible 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.

**Question for Comment: Should the net metering limit be raised or even eliminated in favor of a restriction based on annual load?**

- (b) If a customer with an eligible 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 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 ten kW, a second meter shall be required to measure the solar renewable energy system output for the counting of RECs.
- (II) For systems ten 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 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 energy resource. Nothing in this rule shall prohibit a QRU from requesting changes in rates at any time.

#### **3665. Small Generation Interconnection Procedures.**

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. This rule largely tracks FERC Order 2006. While required to comply with rule 3665, electric cooperative association QRUs and municipal utilities with 5,000 or more customers may reduce or waive any of the insurance requirements within this rule. No utility may require, as a condition of granting interconnection, the transfer of RECs from the interconnection customer to the utility.

**[Note:** See also the addition of paragraph (j)(IV)(A) below which prohibits utilities from requiring a Utility External Disconnect Switch for 10kW and under PV systems.]

- (a) Definitions. The following definitions apply only to rule 3665.
  - (I) "Business day" means Monday through Friday, excluding Federal Holidays.
  - (II) "Distribution system" means 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.
  - (III) "Distribution upgrades" means 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.

- (IV) "Interconnection customer" means any entity, including the utility, any affiliates or subsidiaries of either, that proposes to interconnect its small generating facility with the utility's system.
  - (V) "Interconnection facilities" means 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.
  - (VI) "Interconnection request" means the interconnection customer's request, in accordance with any applicable utility tariff, to interconnect a new small generating facility, 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.
  - (VII) "Party" or "Parties" means the utility, interconnection customer, or any combination of the above.
  - (VIII) "Point of interconnection" means the point where the Interconnection facilities connect with the utility's system.
  - (IX) "Small generating facility" means 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.
  - (X) "Study process" means the procedure for evaluating an interconnection request that includes the Level 3 scoping meeting, feasibility study, system impact study, and facilities study.
  - (XI) "System" means the facilities owned, controlled, or operated by the utility that are used to provide electric service under the tariff.
  - (XII) "Upgrades" means the required additions and modifications to the utility's system at or beyond the point of interconnection. Upgrades do not include interconnection facilities.
- (b) General overview.
- (I) Applicability.
    - (A) A request to interconnect a certified small generating facility no larger than two MW shall be evaluated under the Level 2 Process. A request to interconnect a certified inverter-based small generating facility no larger than ten kW shall be evaluated under the Level 1 Process. A request to interconnect a small generating facility larger than two MW but no larger than ten 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.



- (B) Defined terms used herein shall have the meanings specified in the paragraph (a) of this rule.
  - (C) 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.
  - (D) 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.
  - (E) 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 IC 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 IC 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:
    - (A) Ownership of, a leasehold interest in, or a right to develop a site for the purpose of constructing the small generating facility;
    - (B) An option to purchase or acquire a leasehold site for such purpose; or
    - (C) An exclusivity or other business relationship between the IC and the entity having the right to sell, lease, or grant the IC 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.
- (c) Level 2 - fast track process.
- (I) Applicability. The fast track process is available to an IC proposing to interconnect its small generating facility with the utility's system if the small generating facility is no larger than two MW and if the IC'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.
    - (A) Screens.
      - (i) 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.

- (ii) 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 percent 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.
- (iii) The proposed small generating facility, in aggregation with other generation on the distribution circuit, shall not contribute more than ten percent 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.
- (iv) 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 percent of the short circuit interrupting capability; nor shall the interconnection be proposed for a circuit that already exceeds 87.5 percent of the short circuit interrupting capability.
- (v) 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 IC, 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

- (vi) 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.

- (vii) 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 percent of the nameplate rating of the service transformer.
- (viii) No construction of facilities by the utility on its own system shall be required to accommodate the small generating facility.
- (ix) 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 five percent 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 ten percent 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 1547 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 uses 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.

- (B) If the proposed interconnection passes the screens, the interconnection request shall be approved and the utility will provide the IC an executable interconnection agreement within five business days after the determination.
- (C) 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 IC an executable interconnection agreement within five business days after the determination.
- (D) 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 IC is willing to consider minor modifications or further study, the utility shall provide the IC with the opportunity to attend a customer options meeting.
- (E) 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 IC 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 IC 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:
  - (i) 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
  - (ii) 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
  - (iii) 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 subsection (c)(III)(A)(ii) of this rule. The IC shall be responsible for the utility's actual costs for conducting the supplemental review. The IC 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.
  - (A) 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.
    - (i) If so, the utility shall forward an executable interconnection agreement to the IC within five business days.
    - (ii) If so, and IC 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 IC within five business days after confirmation that the interconnection customer has agreed to make the necessary changes at the interconnection customer's cost.
    - (iii) 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 IC within ten business days that requires the IC to pay the costs of such system modifications prior to interconnection.
    - (iv) If not, the interconnection request will continue to be evaluated under the Level 3 Study Process.
- (d) Level 3 - Study Process.
  - (I) 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 two MW but no larger than ten MW, (2) is not certified, or (3) is certified but did not pass the Fast Track Process or the ten kW Inverter Process.
  - (II) Scoping meeting.
    - (A) 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.

- (B) 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 IC, as soon as possible, but not later than five business days after the scoping meeting, a feasibility 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.
  - (C) The scoping meeting may be omitted by mutual agreement. In order to remain in consideration for interconnection, an IC 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 IC, no later than five business days after the scoping meeting, a 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.
  - (D) 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.
  - (A) The feasibility study shall identify any potential adverse system impacts that would result from the interconnection of the small generating facility.
  - (B) 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.
  - (C) The scope of and cost responsibilities for the feasibility study are described in the attached feasibility study agreement.
  - (D) 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.
  - (E) 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.
  - (A) 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.

- (B) 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 IC 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.
- (C) 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 IC 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.
- (D) 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 IC a distribution system impact study agreement.
- (E) If the feasibility study shows no potential for transmission system or distribution system adverse system impacts, the utility shall send the IC either 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, or an executable interconnection agreement, as applicable.
- (F) In order to remain under consideration for interconnection, the IC must return executed system impact study agreements, if applicable, within 30 business days.
- (G) A deposit of the good faith estimated costs for each system impact study may be required from the IC.
- (H) The scope of and cost responsibilities for a system impact study are described in the system impact study agreement.
- (I) 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 IC 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.
  - (A) Once the required system impact study(s) is completed, a system impact study report shall be prepared and transmitted to the IC 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 IC within the same timeframe.

- (B) In order to remain under consideration for interconnection, or, as appropriate, in the utility's interconnection queue, the IC must return the executed facilities study agreement or a request for an extension of time within 30 business days.
  - (C) 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).
  - (D) 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 IC and the utility may agree to allow the IC 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 IC in accordance with confidentiality and critical infrastructure requirements to permit the IC to obtain an independent design and cost estimate for any necessary facilities.
  - (E) A deposit of the good faith estimated costs for the facilities study may be required from the IC.
  - (F) The scope of and cost responsibilities for the facilities study are described in a facilities study agreement.
  - (G) Upon completion of the facilities study, and with the agreement of the IC to pay for interconnection facilities and upgrades identified in the facilities study, the utility shall provide the IC an executable interconnection agreement within five business days.
- (e) 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 IC agree to a different schedule. If the utility cannot meet a deadline provided herein, it shall notify the IC 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.



- (A) The parties agree to attempt to resolve all disputes arising out of the interconnection process according to the provisions of this article.
  - (B) 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. 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.
  - (C) 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.
  - (D) 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.
  - (E) 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 the agreements between the parties or it may seek resolution at the Commission.
- (III) Interconnection metering. Except as otherwise required by rule 3664, any metering necessitated by the use of the small generating facility shall be installed at the IC's expense in accordance with Commission requirements or the utility's specifications.
- (IV) Commissioning tests. Commissioning tests of the IC's installed equipment shall be performed pursuant to applicable codes and standards, including IEEE1547.1 2005 "IEEE Standard Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems". 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. The utility shall be compensated by the IC for its expense in witnessing level 2 and Level 3 commissioning tests.
- (V) Confidentiality.
- (A) 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." All design, operating specifications, and metering data provided by the IC shall be deemed confidential information regardless of whether it is clearly marked or otherwise designated as such.
  - (B) 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 an agreement between the parties. 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 agreements between the parties, or to fulfill legal or regulatory requirements.

- (i) 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.
  - (ii) 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.
- (C) 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, 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 prior to the release of the confidential information to the Commission. The party shall notify the other party 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 IC 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 IC 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 IC as required by these procedures. The IC 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.
  - (A) 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.
  - (B) 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.
  - (C) The interconnection request shall be evaluated using the maximum rated capacity of the small generating facility.
- (XI) Insurance.
  - (A) For systems of ten 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 ten kW and up to two2 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 two 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.
  - (B) Except for those solar systems installed on a residential premise which have a design capacity of ten 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 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.
  - (C) 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 form 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.

- (f) Level 1 ten kW inverter process. The procedure for evaluating an interconnection request for a certified inverter-based small generating facility no larger than ten 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:
    - (A) 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 percent 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.
    - (B) 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.
    - (C) 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 percent of the nameplate rating of the service transformer.
    - (D) No construction of facilities by the utility on its own system shall be required to accommodate the small generating facility.
    - (E) Provided all the criteria in paragraph (g) of this rule 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.
    - (F) 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.

(G) 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.

(H) 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.

(g) Level 1 10 kW Inverter Process. The following constitutes an application for interconnecting a certified inverter-based small generating facility no larger than ten KW. 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 percent ownership by any electric utility):

Small generating facility information:

Location (if different from above):

Electric service company:

Account number:

Small generator ten 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 ten kW inverter process is available only for inverter-based small generating facilities no larger than ten kW that meet the codes, standards, and certification requirements of paragraphs (h) and (i) of this

rule, 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.

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 ten kW and return of the certificate of completion.

Company signature: \_\_\_\_\_

Title: Date:

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

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

(h) 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

(i) Certification of small generator equipment packages.

(I) 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 paragraph (h), (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.

- (II) 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.
  - (III) 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.
  - (IV) 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.
  - (V) 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.
  - (VI) An equipment package does not include equipment provided by the utility.
- (j) Terms and conditions for Level 1 interconnections -- small generating facility no larger than ten kW.
- (I) Construction of the facility. The interconnection customer may proceed to construct the small generating facility when the utility approves the interconnection request (the application) and returns it to the IC.
  - (II) Interconnection and operation. The IC may operate small generating facility and interconnect with the utility's electric system once all of the following have occurred:
    - (A) Upon completing construction, the interconnection customer will cause the small generating facility to be inspected or otherwise certified by the appropriate local electrical wiring inspector with jurisdiction, and
    - (B) The customer returns the certificate of completion to the utility, and
    - (C) The utility has completed its inspection of the small generating facility. 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.

- (D) 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.
- (III) Safe operations and maintenance. The interconnection 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.
- (IV) 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.
  - (A) No utility shall require an IC to install a Utility External Disconnect Switch (UEDS) to the 10kW or under system. However, a utility may elect to install a UEDS at its own expense.
- (V) Disconnection. The utility may temporarily disconnect the small generating facility upon the following conditions:
  - (A) For scheduled outages per notice requirements in the utility's tariff or Commission rules.
  - (B) For unscheduled outages or emergency conditions pursuant to the utility's tariff or Commission rules.
  - (C) If the small generating facility does not operate in the manner consistent with these terms and conditions.
  - (D) The utility shall inform the interconnection customer in advance of any scheduled disconnection, or as is reasonable after an unscheduled disconnection.
- (VI) 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.
- (VII) Insurance. The interconnection 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 a solar system installed on a premise using the residential tariff and has a design capacity of ten kW or less. The policy shall include that

written notice be given to the utility at least 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. Utilities shall be permitted to periodically obtain proof of current insurance coverage from the generating customer in order to verify proper liability insurance coverage. The interconnection 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.

- (VIII) 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 subparagraph (i)(VI) of this rule.
- (IX) Termination. The agreement to operate in parallel may be terminated under the following conditions:
  - (A) By the Customer by providing written notice to the utility.
  - (B) 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.
  - (C) 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.
  - (D) 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.
- (X) 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. Certification and Registration of Renewable Energy Facilities, Operators, and Developers.**

**Questions for Comment:** Certification of Renewable Energy Facilities

A significant number, if not a majority, of states with renewable portfolio standards have some mechanism for certifying renewable energy facilities developed under the RPS. To better track the development of renewable energy in Colorado, and evaluate the success of the RES, Colorado may wish to follow suit. Below, we pose several questions concerning this possibility followed by a proposed set of rules for obtaining such certification:

- Should the Commission require all eligible energy facilities in Colorado greater than 2 MW to be certified as “Eligible Renewable Energy Facilities”?
- Would such a requirement be statewide or would it apply only to investor owned QRUs and the independent eligible energy providers that sell eligible energy to an investor owned QRU?
- Could the certification be only voluntary?
- What criteria would such certification entail?
- Does the Commission have the statutory authority to require such certification or would there need to be a change in state law? If the Commission has the authority, could it delegate the certification responsibilities to a member of its staff? Should the Commission offer certification of out of state eligible energy facilities?

Below is a proposed set of rules for establishing such a system of certification:

- (a) All eligible energy facilities greater than 2MW in nameplate capacity, whether QRU owned or independently owned and operated, shall apply for certification as an Eligible Renewable Energy Facility according to a process established by the RES Program Administrator. Information required by this process shall include, but not necessarily be limited to:
  - (I) The facility's location, owner, technology, date placed in service, and rated capacity;
  - (II) Information that demonstrates the facility meets the resource eligibility criteria under 40-2-124. C.R.S.
  - (III) Any other information the Commission determines to be necessary
- (b) Each operator of an Eligible Renewable Energy Facility greater than 2MW in nameplate capacity that is providing RECs that will be used for compliance with this renewable energy standard shall maintain a current generator account in WREGIS. Upon certification by the RES Program Administrator, the Administrator will make the requisite notations in WREGIS that the facility is eligible to supply renewable energy and RECs for compliance with the Colorado RES.
- (c) Out of state facilities that do not deliver energy into Colorado but who may wish to provide RECs to a QRU can apply for certification as an Eligible Renewable Energy Facility. Upon completion of this process, the RES Program Administrator will make the appropriate notifications in WREGIS.
- (d) Independent providers of net metered generating systems to end-use customers shall be required to register with the Public Utilities Commission according to a process developed by the RES Program Administrator. **[Note:** here and in part (e) we anticipate a simplified regulatory schema similar to that provided for privately owned water utilities in Part 5, Rules Regulating Water Utilities, 4-CCR-723-5].
  - (I) Each provider shall submit a monthly report, on a spreadsheet template, of the systems it installed in the prior month. This information shall include but not necessarily be limited

to the system capacity and expected annual generation, location, technology, customer, installed cost before any rebates or credits, and other such details as requested by the RES Program Administrator.

**Questions for Comment:** Registration of Net Metered Energy System Providers and Issuance of Operating Permits

With the advent of the third-party, PPA model for large and medium sized solar systems, we now have a new class of providers selling energy directly to retail customers. Yet these providers are unregulated. Should the Commission require all independent providers of net metered generation systems to end-use customers to register with the Commission and obtain operating permits under a relaxed regulatory schema? Would such a requirement be statewide or would it apply only to providers with end-use customers served by an investor owned QRU? Could such registration be only voluntary? What criteria would such registration entail? Recognizing that such a prospect has already been considered under the Geothermal Heat Suppliers Act, §40-40-101 C.R.S., *et seq.*, does the Commission have a model under which to implement such a process or would there need to be a change in state law? If the Commission has the authority, could it delegate the registration responsibilities to a member of its staff?

A proposed system for issuing such operating permits might consider the following:

- (e) The RES Program Administrator shall establish a system of operating permits for Independent operators of net metered generating systems selling energy directly to end use customers. Before commencing construction of customer-sited generating facilities, the operator must obtain an operating permit from the Commission's RES Program Administrator. An operating permit:
  - (I) May not be denied because the area which the applicant proposes to serve is already being served by a gas or electric utility;
  - (II) May not convey an exclusive right to provide services in the area which the applicant proposes to serve;
  - (III) Shall require the applicant to enter into a contract with each customer. The contract, of which only the form and scope are subject to commission review, must specify, at least:
    - (A) The period of time during which service will be provided;
    - (B) The rates or the method for determining rates to be charged during the term of the contract, as negotiated by the parties;
    - (C) That the operator will submit to the Commission's complaint procedures
  - (IV) Before issuing an operating permit, the RES Program Administrator must find that:
    - (A) The applicant is fit, willing, and able to provide the proposed services; and

- (B) The applicant has made an adequate showing that the system being provided by the operator appears reasonably capable of delivering the proposed services.

**3667. – 3699. [Reserved]**