

Memorandum

To: Members of WREGIS Policy Subcommittee
From: Jeremy Weinstein and Kristie Sharp, PacifiCorp
Re: Off-Line Station Service
Date: July 12, 2011

PacifiCorp has sought guidance on the treatment of off-line station service with respect to the calculation of WREGIS Certificates for Class A Generating Units. This memo is provided to examine the WREGIS Operating Rules' treatment of "off-line station service," which as used in this memo refers to electricity provided by the electricity grid to the generating unit while the unit is not operating, and explain the difference between "off-line station service," and "netting of station service" with respect to energy qualified to receive WREGIS certification.

A. WREGIS Operating Rules Provisions

Set forth below for reference are relevant provisions of the WREGIS Operating Rules.

1. Introduction [excerpts]

... One WREGIS Certificate shall be created for each MWh of renewable energy produced, and each WREGIS Certificate will be assigned a unique serial number. ...

2. Definitions of Terms [excerpts]

Certificate: The term "Certificate," as used in this document, refers to a WREGIS Certificate. A WREGIS Certificate represents all Renewable and Environmental Attributes from one MWh of electricity generation from a renewable energy Generating Unit registered with WREGIS or a Certificate imported from a Compatible Registry and Tracking System and converted to a WREGIS Certificate.¹ [1 A renewable Generating Unit, for the purposes of WREGIS, includes any Generating Unit that is defined as renewable by any of the states or provinces in the WECC.] The WREGIS system will create exactly one Certificate per MWh of generation that occurs from a registered Generating Unit or that is imported from a Compatible Registry and Tracking System. Disaggregation of certificates is not currently allowed within WREGIS.

Station Service: The electric supply for the ancillary equipment used to operate a generating station or substation.

Wholesale Generation Also Serving On-Site Loads: Generating Units interconnected to the transmission systems, but with on-site loads other than station-service drawing service from the generator before the Balancing Authority's revenue metering point. [such units greater than 125kw are designated Class E and Table 9-1 in Addendum A]

9.3 Revenue Metering Standards

For each renewable energy resource, total MWhs of generation shall be measured at the point of interconnection to the transmission or distribution company's system or adjusted to reflect the energy delivered into either the transmission or distribution grid at the high side of the transformer.⁹[9 Losses occurring on the bulk transmission or distribution systems after the metering point are not reflected in the number of certificates created except as required by a Balancing Authority's metering protocols.]

9.3.1 Class A

Generating Units whose generation is reported by a Balancing Authority on a unit-specific basis are always classified as Class A. The original data source for reporting must be from a revenue-quality meter output measuring, or adjusted to reflect, the energy delivered into the transmission grid at the high side of the transformer.¹⁰ [10 Losses occurring on the bulk transmission or distribution system after the metering point are not reflected in the number of certificates created.] The data must be electronically collected by a meter data acquisition system, such as a MV-90 system, or pulse accumulator readings collected by the Balancing Authority's energy management system, and verified through a Balancing Authority checkout/energy accounting or settlements process.

9.3.2 Classes B – G

Generating Units whose generation is not reported by a Balancing Authority on a unit-specific basis and are not Customer sited Distributed Generation will fall into the classification of Classes B-G depending upon their other specifications as outlined in Table 9-1. The original data source for reporting must be from a revenue-quality meter output measuring, or adjusted to reflect, the energy delivered at the high side of the transformer. The preferred source for the data is a meter data acquisition system.

If a Qualified Reporting Entity does not have an electronic source for collecting revenue meter data, then manual meter reads of the revenue meter at the point of interconnection to the transmission grid will be accepted.

9.6 On-Site Load, Station Service and Off-Grid Generation

As long as the Qualified Reporting Entity meets the requirements related to metering, communication and verification of dynamic data, WREGIS Certificates may be created for any renewable energy production serving a load that would have been served by the grid if not for the generator (on-site load).

In order for on-site load to contribute to Certificates, the Generating Unit must have sufficient metering in place to measure, either directly or through a process of netting, the on-site load. If a netting process is used, it must be designed to exclude Station Service. WREGIS Certificates will not be created for generation supplying Station Service. If on-site load is metered directly, the Generating Unit must have two separate meters, one to meter the on-site load and one to meter generation that is supplied to the grid and each meter must be registered separately with WREGIS. If on-site load is measured through a netting process both the meter measuring generation supplied to the grid and one of the other meters involved in the netting process must be registered separately with WREGIS. The method of metering to be used as well as the netting process, if applicable, must be reviewed and approved by WREGIS staff prior to the on-site load being registered and reported in WREGIS.

On-site load must be adjusted for transformation losses to the high side of the transformer.

Off-grid generation is not eligible for creation of WREGIS Certificates at this time.

B. Analysis.

1. WREGIS Operating Rules Do Not Provide for a Deduction for Off-Line Station Service

No WREGIS Certificates are being sought for off-line station service. PacifiCorp believes the Operating Rules provide that the WREGIS Certificate calculation based on metered net output at the high side of the transformer for Class A Generating Units do not have further subtracted an amount equal to off-line station service. The rules do not require that a generator engage in a station service subtraction calculation twice- once when the generator is online and

generating and again to subtract more station service for an hour that the generator is off line and not generating. Rather, WREGIS Operating Rules require the generation to be net of station service, but do not require an additional subtraction over and above the netting of station service.

a. The Operating Rules Address Off-Line Station Service by Providing that no WREGIS Certificates Shall be Created for Off-Line Station Service

A WREGIS-reporting generator may seek WREGIS Certificates only for metered net output – deducting station service to the Generating Unit from generation while the Generating Unit is operating – at the high side of the transformer. The WREGIS Operating Rules do not say “deduct station service” to determine WREGIS Certificates. Rather, the only specific exclusion of station service is in the requirement for net metering: “If a netting process is used, it must be designed to exclude Station Service.” No provision of the WREGIS Operating Rules specifies that a Generating Unit must deduct station service when the resource is off-line.

Instead, WREGIS Operating Rules Section 9.6 provide:

WREGIS Certificates *will not be created* for generation supplying Station Service. ... A generator *may not seek* WREGIS Certificates for off-line station service.

The Operating Rules provide that one may not receive WREGIS Certificates for off-line station service; this is quite different from saying that one deducts off-line station service. Accordingly, the Operating Rules address off-line station service by providing that there shall not be WREGIS Certificates created for such energy, and not by providing that such energy is deducted from WREGIS Certificate creation.

b. The Definition of a WREGIS Certificate is Consistent with No Deduction for Off-Line Station Service

Off-line station service occurs at a time that is different from the time at which RECs are created by generation (already net of station service) by the Generating Unit. The Operating Rules do not set forth any instructions requiring, or explaining how to calculate, a further deduction for electricity consumed by the unit when it is not generating. In contrast, once a megawatt hour of net generation creates a WREGIS Certificate pursuant to the Operating Rules, there is nothing in the Operating Rules providing for the WREGIS Certificate to be extinguished based on subsequent or prior consumption of electricity by the Generating Unit. Once created and measured net of station service generation by the Generating Unit, a WREGIS Certificate can be sold or retired; use of off-line station service by the Generating Unit is not specified in the Operating Rules as a manner in which a WREGIS Certificate can be extinguished.

Data validation provisions of the Operating Rules, such as those provided in Section 6.1, specifically use concepts, such as “duration,” referring to “generation activity” that is “measured in hours,” consistent with this understanding of the Operating Rules.

c. Other Provisions of the Operating Rules On Station Service are Consistent with No Deduction for Off-Line Station Service

WREGIS Operating Rules Section 9.6 also provides:

As long as the Qualified Reporting Entity meets the requirements related to metering, communication and verification of dynamic data, WREGIS Certificates may be created for any renewable energy production serving a load that would have been served by the grid if not for the generator (on-site load).

Note that this issue is distinct from the clarification being sought here. PacifiCorp is not stating that there may be WREGIS Certificates for generation from the unit for on-site or off-site load. However, the logic of this rule, which provides circumstances when such generation may be counted, is consistent with the generation of the unit not having a further deduction from its production for off-line station service. If WREGIS Certificates may be created for load that would have been served by the grid if not for the generator, there should not be a deduction for load that is in fact served by the grid if not for the generator. If the renewable unit “was not there,” a coal or gas unit “would be there.”

In other words, the WREGIS Operating Rules do not provide for a deduction for off-line station service from metered net generation.

2. Green-e Standards.

PacifiCorp believes that not deducting for off-line station service is consistent with Green-e Standards. Section 2.G. of the Green-e National Energy Standards provides:

G. Parasitic Load

Renewable energy consumed as parasitic load of an eligible facility is not eligible for use in a Green-e Energy Certified product. Parasitic load is a load that contributes to the process of electricity generation.

There is not electricity generation in process when the unit is off-line and not generating electricity.

3. Other GIS Standards.

PacifiCorp has reviewed the Operating Rules and Operating Procedures of PJM-GATS, M-RETS and NEPOOL and in none of those other GIS rules did PacifiCorp find requirements for the deduction of off-line station service.

4. California IOU practice.

SDG&E by Advice Letter 2232-E requested CPUC approval of the following definition of station service for its renewable auction mechanism procurement program:

“Station Service” means the electric energy produced by the Project that is used within the Project to power the lights, motors, control systems and other auxiliary electrical loads that are necessary for operation of the Project.

[3.1(a)] The “Product” to be delivered and sold by Seller and received and purchased by Buyer under this Agreement is As-Available Energy, Capacity Attributes, Green Attributes, and other ancillary products, services or attributes similar to the foregoing which are or can be produced by or associated with the Project (net of Station Service) in accordance with the terms hereof.

5. Data Integrity.

a. Within WREGIS.

As demonstrated in the technical appendix attached, data integrity issues are presented if the two channels of meter data have to be manually processed. There is nothing in the Operating Rules requiring deduction of off-line station service; attempting to read in such a provision would leave the Operating Rules providing no guidance as to the mechanics, start times and the end times of off-line portion of the station service. This would render the Operating Rules, and requirements for the creation of WREGIS Certificates, ambiguous.

b. FERC Reporting.

Deducting off-line station service from net metered generation would render WREGIS data inconsistent with data reported by compliance entities to FERC on FERC Form 1s. Contradictions in governmental regulatory filings is undesirable, and would logically lead to questioning of one or all sets of filed data by one or more regulators.

c. PPA Payments.

Deducting off-line station service from net metered generation would render amounts paid by power purchase agreement (PPA) off-takers for net output at the delivery point at variance from the actual amount of WREGIS Certificates received.

Technical Appendix

Metering Background

Meters used for reporting data to WREGIS have multiple channels. Each channel can record megawatts in either direction, vars in either direction, volts, and amps, or calculations of the same. The quantity a channel records is dependent upon the programming of the meter. In smaller generators, a single channel records the net generation and another channel records the offline station service. When the small generator is generating, any station service loads are served on the generator side of the meter, so that the only power that is recorded is net generation in a single channel of the meter. A separate channel in the meter records power moving in the opposite direction for offline station service. This is typical of a situation where all power moves through a single transformer (see Figure 1). In larger generators, the station service may be served by a separate transformer (see Figure 2). In this case separate meters collect data on station service and generation. One meter records all station service in a single channel and another meter records all generation in a single channel. Some generators have been around for over one hundred years. Over that time span, metering technologies and procedures for meter placement have evolved. The above description of meter placement is an overview for different arrangements. In reality meters can be on either side of transformers and compensated to the opposite side via calculation. Meters can also be located some distance away because of distant geographical delivery points to the transmission system. Meters can also be compensated for losses to a distant point via calculation. Because there are numerous ways meters can be set up, there is not a “one size fits all” solution to reporting meter data. The most equitable solution is to report net generation, without additional calculations for offline station service.

Station Service

Offline station service occurs when a generator is not generating, but auxiliary systems still require power. The control buildings and control systems use power. The step up transformer and substation also require power to stay energized.

Online station service occurs when a generator is generating. It typically includes excitation of the generator and all control buildings and control systems.

Figure 1 depicts a simple meter diagram with a single transformer. The generation meter only picks up the generation, net of online station service. When the unit is offline, the meter picks up the offline station service in a separate channel. Figure 2 shows a more complex situation in which the station service is fed by a separate transformer. The generation metering picks up gross generation, and the station service meter monitors station service when the unit is generating and when the unit is offline in a single channel. There are several possible combinations for the physical locations of meters and the way in which station service is metered.

Figure 1 Simplified meter diagram with a single transformer

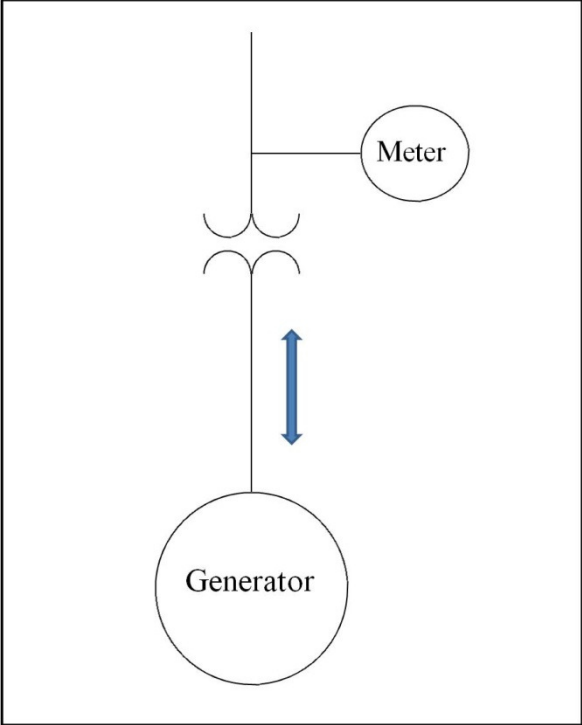


Figure 2 Simplified meter diagram with a separate station service transformer

