Business Practice #63: Transmission Customer Provision of Reactive Supply and Voltage Control from Generation or Other Sources Service

Posted: ~~February 20, 2017~~**January 1, 2021**
Effective: ~~March 6, 2017~~**January 1, 2021**
Revision No.: ~~1~~2.0

NOTICE
A redline version of the most recent revisions to this business practice is available at:
https://www.oasis.oati.com/woa/docs/PPW/PPWdocs/BP63red.pdf

Policy Reference
PacifiCorp's Open Access Transmission Tariff ("OATT"), Schedule 2 – Reactive Supply and Voltage Control from Generation or Other Sources Service ("Reactive Supply and Voltage Control Service"), and PacifiCorp Planning Policy No. 139 – Facility Connection Requirements for Transmission Systems (46 kV and Higher Voltages).

Definitions
No definitions other than those currently contained in PacifiCorp's OATT are required for this business practice.

Purpose
The purpose of this business practice is to establish a Transmission Customer's option to self-supply Schedule 2, Reactive Supply and Voltage Control Service, for its own transactions, including the eligibility requirements that a Transmission Customer must satisfy to self-supply Schedule 2 service and receive a corresponding credit from Transmission Provider. Any Transmission Customer or Interconnection Customer that has a rate schedule for Reactive Supply and Voltage Control on file with the Federal Energy Regulatory Commission for any generator or other resource located within PacifiCorp BAA will not be eligible to receive this credit from the Transmission Provider.

Practice
All transactions requiring Transmission Service over Transmission Provider's transmission facilities require the provision of Reactive Supply and Voltage Control Service~~. The purpose of this business practice is to establish a Transmission Customer's option to provide Reactive Supply and Voltage Control Service for its own transactions, including the eligibility requirements that a Transmission Customer's generator must~~

~~satisfy in order to supply such service and receive a corresponding credit from Transmission Provider.~~ in accordance with Schedule 2.

~~**Practice**~~

Pursuant to Schedule 2 of PacifiCorp's OATT, Reactive Supply and Voltage Control Service is to be provided directly by the Transmission Provider (if the Balancing Authority ("BA")) or indirectly by the Transmission Provider making arrangements with the BA that performs this service for the Transmission Provider's Transmission System. The Transmission Customer must purchase this service from the Transmission Provider or the BA.

A Transmission Customer may be eligible to provide all or a portion of its reactive supply and voltage control obligations from a qualifying ~~generator~~resource. Qualifying ~~generators~~resources must meet the minimum criteria described in this business practice~~.~~ to self-supply all or a portion of its Reactive Supply and Voltage Control obligations. To the extent a Transmission Customer can self-supply Reactive Supply and Voltage Control Service for at least a portion of its Schedule 2 transactions through a qualifying ~~generator~~resource, it will be eligible to receive a Schedule 2 credit through the mechanism described in this business practice.

Qualifying ~~Generator~~Resource Requirements

~~The following is required for a Transmission Customer~~ ***to*** ~~demonstrate the ability to provide~~***supply*** ***Reactive Supply and Voltage Control Service*** ~~for its own transactions on Transmission Provider's Transmission System:~~

The Transmission Customer must make an application (in the attached form) to the Transmission Provider requesting approval of its use of a qualifying ~~generator.~~resource to self-supply Reactive Supply and Voltage Control Service to offset all or a part of its obligations under Schedule 2. Qualifying ~~generators~~resources must demonstrate ~~all of~~ the following characteristics, among other things, as set forth in the Application for Provision of Reactive Supply and Voltage Control from Generation and Other Sources Service, to be eligible for a Schedule 2 credit:

~~1) The generator has an exciter and can be operated in the *Automatic Voltage Regulator (AVR)* mode.~~

1) The resource must be able to provide reactive power within the power factor range of 0.95 leading to 0.95 lagging.

2) All qualifying resources shall be controlled by an automatic voltage regulator system having the capability for both voltage regulation and net power factor regulation operating modes.

3) All qualifying resources shall be accurately modeled within the PacifiCorp EMS system to ensure real-time visibility of the resource from the resource's RTU.

~~2)~~4) The generator must follow the voltage schedule supplied by the Transmission Provider. ~~For lack of~~ If no voltage schedule is provided, the generator must operate at the nominal voltage level, unless called upon by the Balancing Authority ("BA") to do otherwise. Additionally, if there is a voltage ~~schedule, the generator must demonstrate the power factor requirements as written in PacifiCorp's Facility Connection Requirements attached and included as part of the Generation Interconnection Agreement.~~event on the system, then the resource must be able to respond due to the local change in voltage.

~~3)~~5) The ~~generator is~~resource must be capable of responding automatically to voltage ~~and/~~or reactive control settings and to manual directives from the BA, as defined in the OATT, when called upon to supply reactive support (either to generate ~~and~~or absorb reactive energy) to PacifiCorp's Transmission System. Automatic response must be immediate and manual response must occur within ~~5~~five minutes of notice. ~~Generators which~~Transmission customers whose resources fail to respond as directed by the BA two times within a rolling twelve month period will be disqualified from the self-supply credit for that month and future months until such time as the ~~Control Area operator can be assured the unit~~transmission customer demonstrates to the BA that its resource can be relied upon~~.~~ to generate or absorb reactive energy, as described above. The transmission customer shall coordinate a test of its resource with PacifiCorp to demonstrate that the resource is capable of providing voltage support.

~~4)~~6) ~~The generator is~~The resource must be located within the PacifiCorp BA and interconnected to PacifiCorp's Transmission System or connected to a PacifiCorp Network transmission customer-owned transmission system within PacifiCorp's Balancing Authority Area ("BAA"). ~~If the Generator is interconnected to the PacifiCorp Transmission System, it must meet current PacifiCorp Policy 139 ("Facility Connection Requirements for Transmission Systems") standards.~~

7) At least every five years (with no more than 66 calendar months between verifications), each Transmission Customer shall certify to PacifiCorp that the resource(s) it uses to self-supply its Schedule 2 requirements can operate at nameplate MVA, MW and MVAR ratings through performing a MOD-25 or comparable test. The test results shall be sent to PacifiCorp with the application below to demonstrate the resource's capability. In the event that the resource(s) are unable to operate at nameplate ratings, such ratings will be adjusted downward to reflect the degradation in the operation of the resource(s), and the adjusted real power values (MWs) will be used in the crediting process, until such time that the Transmission Customer can re-certify to PacifiCorp that that the resource(s) it uses to self-supply its Schedule 2 requirements can operate at nameplate MVA, MW and MVAR ratings.

Any ~~generators~~resources jointly owned by PacifiCorp and a Transmission Customer subject to Schedule 2 charges and for which PacifiCorp's costs are included in the calculation of Reactive Supply and Voltage Control Service rates, shall be deemed qualified. If a Transmission Customer jointly owns a ~~generating facility~~resource and/or only wants to qualify part of a ~~facility~~resource, the Transmission Customer must specifically state the ~~generator~~resource parameters for what will be applied towards the ~~qualified facility.~~Schedule 2 credit. Specifically, the Transmission Customer will need to provide the ~~generator unit~~resource and accompanying characteristics, the generator unit interactions with other generating units (if applicable), ownership share information (if applicable), or any other information as determined by PacifiCorp as relevant.

Credit Mechanism

~~The total Reactive Supply and Voltage Control Service obligation for a Transmission Customer who supplies such service for its transactions shall be equal to the total amount of load served within the BAA and/or generation exported from the BAA. The billing determinants for Reactive Supply and Voltage Control Service shall be determined by:~~

~~(1) For the hour of the transmission system peak, subtracting from a Transmission Customer's full requirement the total amount supplied by qualifying generator(s) during that hour each month; and~~

~~(2) Charging the Transmission Customer the Schedule 2 rate multiplied by the difference, in MWs, calculated in item (1) to the extent the transmission customer supplied less than its full requirement during the coincident peak hour.~~

~~Upon approval by the Transmission Provider, the details for the specific qualifying generator~~The self-supply credit is based upon the capability of the qualifying resource. To qualify for this credit mechanism, the Transmission Customer's Qualifying Resource shall meet the Qualifying Resource Requirements to supply Reactive Supply and Voltage Control Service described above. The Schedule 2 credit shall be based upon the real power (MW) capability of the resource. The transmission customer will be charged the difference between its Schedule 2 obligations for its Network Load or point-to-point transmission service and the resource's capability times the currently effective Schedule 2 rate. The total Reactive Supply and Voltage Control Service self-supply credit shall not exceed the total amount of the Schedule 2 charge which otherwise would be assessed to the Transmission Customer for load located within the BAA or for point-to-point transmission service. Notwithstanding, any resource that is used to reduce a transmission customer's Network Load is not eligible to receive a Schedule 2 credit, as the resource is already reducing the Network Load upon which Schedule 2 is assessed. . However, if that resource is tracked in the network model and not netted against load, then the resource would be eligible to receive a credit against Schedule 2 charges subject to the required operating requirements outlined in this business practice. Upon approval by the Transmission Provider, the details for the specific qualifying resource and crediting mechanisms will be described in the Transmission Customer's agreement for Transmission Service with the Transmission Provider.

Contact for Assistance: BusinessPractices@PacifiCorp.com

Revision History

Version	Posted Date	Change Summary
2.0	01/01/21	Added qualifying resource language to include renewable resources and add capability testing requirements. Updated the credit mechanism for the credit to be based on the reactive power capability of the resource.
1.0	3/6/2017	Clarifications to Qualifying Generator Requirements and the attached Application for Provision of Reactive Supply and Voltage Control from Generation or Other Sources Service to clarify generator requirements and information needed to evaluate requests submitted pursuant to this Business Practice.
0.0	5/1/13	In the attached Application for Provision of Reactive Supply and Voltage Control from Generation or Other Sources Service, specified that the completed application and documentation should be sent to the BusinessPractices@PacifiCorp.com e-mail address and added a footnote to clarify when PacifiCorp considers the documentation requirement fulfilled.
DRAFT	2/22/13	Initial draft posted for public comment

Application for
Provision of Reactive Supply and Voltage Control from Generation or Other Sources Service

Transmission Customer Name: _____

Address: _____

Contact Name: _____

Contact Phone: _____

Pursuant to PacifiCorp OATT's and Business Practice #63, the above-listed transmission customer requests to provide all or a portion of the following Ancillary Service:

_____ **Reactive Supply and Voltage Control from Generation or Other Sources Service – Schedule 2**

Transmission Customer shall complete this application for each generator it seeks to qualify. Transmission Customer certifies it has one or more resources qualified to provide a portion or all of its obligations for the Ancillary Service selected above in conformance with the requirements in PacifiCorp's OATT and outlined in PacifiCorp Business Practice #63 – Transmission Customer Provision of Reactive Supply and Voltage Control from Generation or Other Sources Service. Transmission Customer submits the attached completed form for each such resource. Submission of this application and any supporting documentation should be sent to BusinessPractices@PacifiCorp.com. In addition, Transmission Customer understands that Transmission Provider may request additional information as needed to further support the documentation given herein.

Application for Provision of Reactive Supply and Voltage Control from Generation or Other Sources Services (con't)

1. Please list resource providing the service along with its nameplate capacity; will the full facility be used or only part?

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2. Please indicate by what means the resource listed above are deliverable. Please list applicable transmission service agreement for the resource identified above.

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3. Please provide a point of contact for the resource listed above (or a resource dispatch center) that is available any time the resource is providing reactive supply and voltage control from generation or other sources service.

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4. Provide documentation demonstrating that each generator or other sources service providing reactive supply and voltage control meets the qualifications described in PacifiCorp's Business Practice #63 – Transmission Customer Provision of Reactive Supply and Voltage Control from Generation or Other Sources Service[1].
   ~~a. The generator has an exciter and can be operated in the *Automatic Voltage Regulator (AVR)* mode.~~

[1] PacifiCorp will consider this requirement fulfilled if the generator owner/operator attests compliance with the currently effective North American Electric Reliability Corporation ("NERC") VAR-002 Reliability Standard. Upon PacifiCorp's acceptance of a qualified generator, the generator owner/operator must also comply with the PacifiCorp Voltage Schedule provided at least annually to each generator owner/operator.

~~b. The generator must follow the voltage schedule supplied by Transmission Provider. For lack of a voltage schedule, the generator must demonstrate the power factor requirements as mentioned in the interconnection study.~~

~~c. The generator is capable of responding automatically to voltage and/or reactive control settings and to manual directives from the BA when called upon to supply reactive support (generate and absorb reactive energy) to the Transmissions Provider's Transmission System; and~~

~~d. The generator is interconnected to the Transmission Provider's Transmission System or connected to a PacifiCorp transmission customer-owned transmission system with PacifiCorp's BAA.~~

a. ~~Proof that the generator meets current PacifiCorp Policy 139 standards.~~ An attestation that the resource meets the requirements stated in PacifiCorp's Business Practice #63.

b. MOD-25 or comparable test results illustrating the resource capability. In the event that the resource(s) are unable to operate at its nameplate ratings, such ratings will be adjusted downward to reflect the degradation in the operation of the resource(s), and the adjusted real power values (MWs) will be used in the crediting process.

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Transmission Customer attests to the following:

- The information and documentation provided to section 4a-e is current and accurate
  OR
- Transmission Customer is a registered entity with NERC following VAR-002

Name _____ Title _____

Signature _____ Date _____