

July 10, 2020

***VIA ELECTRONIC FILING***Public Utility Commission of Oregon  
Attention: Filing Center  
201 High Street SE, Suite 100  
Salem, OR 97301-3398**RE: Advice No. 20-008  
Rule 3—Description of Service**

In compliance with ORS 757.205 and OAR 860-022-0015, PacifiCorp d/b/a Pacific Power (PacifiCorp or the Company) submits for filing the following proposed tariff page associated with Tariff P.U.C. OR No. 36, which sets forth all rates, tolls, charges, rules, and regulations applicable to electric service in Oregon. PacifiCorp requests an effective date of August 12, 2020.

Sheet	Schedule/Rule	Title
Second Revision of Sheet No. R3	Rule 3	Description of Service

**Proposal**

PacifiCorp proposes to update Tariff Rule 3, Description of Service, to allow PacifiCorp to offer single-phase 240/480 volt (V) service as a standard service voltage. The Company proposes this change to match the customer uses on the system.

**Background**

Approximately 40 percent of distribution lines on PacifiCorp's system are constructed single phase. The lack of a three-phase supply creates challenges for customers with equipment that requires three-phase power. Electric motors in particular have limited commercial -availability in single-phase ratings above 7.5 horsepower. Costs to extend three-phase primary lines range from \$60,000 to \$150,000 per mile.

If capacity is available on an existing single-phase line, a three-phase supply can be derived from a variable frequency drive or rotary phase converter. Providing single-phase 240/480 V service reduces the three-phase customer's costs when only single-phase service is available. On average, 480 V class phase converters and motors are 10 percent to 25 percent cheaper than 240 V class phase converters and motors, and additional savings are realized in wiring and conduit costs.

**Potential Uses**

Long Service Runs & Voltage Drop – Single-phase 240/480 V service is the typical voltage for a number of transportation agencies for roadway lighting. As lighting circuits

may extend for several miles, single-phase 240/480 V service is used to reduce wiring costs and voltage drop. Providing 240/480 V service will reduce transportation agency costs by eliminating their need to install 2:1 step-up transformers to obtain 240/480 V service from currently available 120/240V services.

*Electric Vehicle Charging* – Direct Current (DC) Fast charging (50 kilowatts (kW) to 150 kW) is an emerging use case for 240/480 V service. Currently, all commercially available options require three-phase power. The Company has had discussions with several vendors with single-phase solutions under development, in order to enable DC Fast charging in areas where only single phase is available. Allowing for single-phase, 240/480V service will reduce service entrance, wiring, and alternate current rectification stage costs, over that required if only 120/240 V service were available.

### **Potential Impacts**

Accommodating single-phase 240/480 V service will have very little impact to the Company's current construction standards, practices, and inventory requirements. Additional stock item numbers and inventory will be required to support pad-mount installations, but no impact to overhead transformer stocking levels is anticipated. Current standards and equipment support metering of 240/480 V single-phase services, and no impact to system planning is anticipated with the introduction of single-phase 240/480 V service.


It is respectfully requested that all formal data requests regarding this filing be addressed to:

By email (preferred): [datarequest@pacificorp.com](mailto:datarequest@pacificorp.com).

By regular mail: Data Request Response Center  
PacifiCorp  
825 NE Multnomah, Suite 2000  
Portland, OR 97232

Informal inquiries may be directed to Cathie Allen, Regulatory Affairs Manager, at (503) 813-5394.

Sincerely,



Michael Wilding  
Director, Net Power Costs & Regulatory Policy

Enclosures

## **Proposed Tariff Sheet**

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**Description of Service**

Electric service furnished under this tariff will be alternating current, 60 hertz, single or three-phase, at one of the nominal standard voltages given below. (T)

**Secondary Voltages**

a. Standard Voltages:  
Single-phase, 120 volt, two-wire, grounded  
Single-phase, 120/240 volt, three-wire, grounded  
Single-phase, 240/480 volt, three-wire, grounded (N)

Three-phase, 120/208 volt, four-wire grounded, wye (C)  
Three-phase, 277/480 volt, four-wire, grounded, wye (C)

b. Alternate Voltages:  
Under certain conditions and at the option of Company three-phase, 120/240 volt, four-wire, grounded, delta, will be provided. Existing services of other voltages will be maintained to the extent deemed practical by the Company; and, when changes are required, service will be provided at one of the standard voltages. (C)  
(N)  
|  
(N)

c. Secondary delivery limitations:  
Company, at its option, may limit the maximum or minimum load served at any of the above secondary voltages through a single point of delivery to a size commensurate with the capacities of transformers of that voltage designated as a Company Standard.

**Primary Voltages**

a. Standard Primary Voltages are 7,200/12,470, 12,000/20,800, and 19,900/34,500 volt, four-wire, grounded. Three-phase or single-phase metering points can be provided.

b. There are other primary voltages in use by Company, including 2,400/4,160 volt, wye. All primary voltages are limited to the voltages on the Company's local distribution lines and are subject to future conversion to the standard voltages listed in "a." above.

c. Primary or greater voltage delivery is subject to local availability of those voltages, any special conditions and restrictions that Company may determine to be necessary, and the Consumer signing a written contract.