Exhibit No. JES-4
Docket UE-161123
Witness: Jennifer Snyder

BEFORE THE WASHINGTON
STATE UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **PUGET SOUND ENERGY,** **Respondent.**	**DOCKET UE-161123**

EXHIBIT TO TESTIMONY OF

Jennifer E. Snyder

STAFF OF
WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION

Puget Sound Energy Response to Staff data request 23

April 11, 2017

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

Docket UE-161123
Puget Sound Energy's
Schedule No. 451 Large Customer Retail Wheeling

WUTC STAFF DATA REQUEST NO. 023

WUTC STAFF DATA REQUEST NO. 023:

Reliability

Staff Data Request No. 14 asks what steps "PSE would take to disconnect Schedule 451 customers without effecting core customers, particularly those sharing distribution system with Schedule 451 customers."

In its response to Staff Data Request No. 14, PSE states, "In the unlikely event that sufficient replacement energy is not available; PSE shall notify the Schedule 451 customer to curtail their load. If the Schedule 451 customer fails to comply with the curtailment, PSE may discontinue service to such customer. PSE would discontinue service by opening electric circuits at the following types of equipment: circuit breakers, switches, j-boxes and transformers."

PSE's response does not fully answer Staff's question, as the response does not address any protections for core customers.

One of the main distinctions between Schedule 448-449 and Schedule 451 is that Schedule 451 customers accept wheeling service at the distribution level, and may be situated in the middle of multiple PSE substations. This means, unlike Schedule 448-449 customers, who are easily curtailed at the transmission level, PSE may be physically unable to curtail or disconnect Schedule 451 customers without adversely impacting the company's core customers, unless special equipment is purchased, installed and integrated into PSE's management systems.

a. In the event of a general power supply failure – a general failure, not attributable to any non-core customer – which customers would be first to be curtailed or disconnected?

b. In the event that a Schedule 451 customer fails to secure enough power to meet its load during a peak event, and PSE's "commercially reasonable efforts" to obtain

energy are not sufficient to meet all load in PSE's balancing area, please describe PSE's process in curtailing load.

1. If a power supply failure was caused by a shortage in power delivered to a non-core customer, does PSE have the capability to identify which power supplier and customer was short? If so, is this information used in determining which of PSE's customers are curtailed?

2. Which PSE customers would be curtailed? Please reference any applicable tariffs, describe how PSE makes the decision to curtail an interruptible customer, as well as how PSE determines which interruptible customer to curtail.

c. How does PSE track the financial implications of any curtailments? Please list the steps taken and the data sources used to determine these fees and credits. Please include any relevant sources for pricing information used to calculate these fees, including any references to outside markets or the Energy Imbalance Market, and explain how these sources are used.

d. Does Schedule 451 require that its customers have circuit breakers, switches and other infrastructure upgrades which would enable PSE to curtail or disconnect a Schedule 451 customer without impacting core customers who share distribution facilities?

e. Please provide an estimate of the total costs required to purchase and install curtailment and disconnection capability for a hypothetical Schedule 451 customer averaging 10 MW in six office buildings, and situated in an urbanized area served by multiple PSE substations. In this estimate, please provide a cost breakdown for materials and labor, and please estimate a timeline for implementing a project of this scale.

Response:

a. In the event of a general power supply failure that is not attributable to any non-core customer, Puget Sound Energy ("PSE") would follow the process described in the Electric Tariff G Schedule 80 General Rules and Provisions, Section 12 Continuity of Service, Subsections c and d. Schedule 80 applies to both core and non-core customers. In this case both core and non-core would be subject to curtailment.

b. PSE responds as follows for each of the situations described:

1. If a power supply failure were caused by a shortage of power delivered to a non-core customer and PSE's "commercially reasonable efforts" to

obtain energy are not sufficient to meet all load in PSE's balancing area, PSE has the capability to identify which power supplier and customer was short through the PSE's Load Office Balancing Authority Operator and Transmission Scheduling Desk. If this power supply failure were to occur due to a non-core customer being short on supply, the non-core customer's energy supplier is notified by PSE to identify an alternate supply or prepare to be curtailed.

2. The non-core customer that is short on supply would be curtailed first. If additional curtailments were required, PSE would follow the process described in Electric Tariff G Schedule 80 General Rules and Provisions, Section 12 Continuity of Service, Subsections c and d for both core and non-core customers.

c. If a customer is curtailed, there is no material cost incurred by PSE and therefore no fee to impose.

d. PSE does not require Schedule 451 customers to have circuit breakers, switches and other infrastructure upgrades which would enable PSE to curtail or disconnect a Schedule 451 customer. However, PSE has the ability to curtail or disconnect a Schedule 451 customer by opening electric circuits at the following types of PSE owned equipment: circuit breakers, switches, j-boxes, and transformers. Please see PSE's Response to WUTC Staff Data Request No. 014.

Schedule 451 customers taking transmission service under PSE's OATT are required to follow the Technical Specifications and Operating Protocols and Procedures for Interconnection of Transmission Facilities or End-User Facilities. Technical Specifications Section 6.3 SCADA RTU (Remote Terminal Unit) Metering requires end-user load facilities that are above 4 MW to have real time monitoring at PSE's 24-Hour Operations Center. In Microsoft's case, there are four existing locations that have loads that are above 4 MW and will require SCADA improvements to PSE's system to provide real time monitoring of these four Microsoft locations at PSE's 24-Hour Operations Center.

e. PSE is unable to perform an estimate of the total costs required to purchase and install curtailment and disconnection capability for a hypothetical Schedule 451 customer averaging 10 MW in six office buildings, and situated in an urbanized area served by multiple PSE substations. Any such estimate would require a fact-specific facility study, and the costs to purchase and install such equipment would depend on the electrical configuration of the transmission and distribution systems, the electrical configuration of the hypothetical Schedule 451 customer buildings, and the types of equipment currently in place at such locations, if any.

Moreover, the installation of curtailment and disconnection capability at customer locations is not a requirement under Schedule 451.