EXH. CAK-5
DOCKETS UE-19___/UG-19___
2019 PSE GENERAL RATE CASE
WITNESS: CATHERINE A. KOCH

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **PUGET SOUND ENERGY,** **Respondent.**	**Docket UE-19____** **Docket UG-19____**

FOURTH EXHIBIT (NONCONFIDENTIAL) TO THE PREFILED DIRECT TESTIMONY OF

CATHERINE A. KOCH

ON BEHALF OF PUGET SOUND ENERGY

JUNE 20, 2019

PUGET SOUND ENERGY

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I. STORM DEFERRAL OVERVIEW

Q. Please briefly describe the criteria of the Storm Deferral Mechanism and relevant events since the last rate case.

A. Major storm events cause significant disruption in service and require PSE to focus substantial resources on storm response. Timely storm response, repair and resolution of outages are very important to customers and PSE. In PSE's service territory, storm events are not a theoretical concern. PSE's service territory is located in the Puget Sound Convergence Zone and is subject to frequent severe weather. Restoration efforts result in significant costs that PSE should be allowed to recover to further its goal of providing safe and reliable service to its customers. The events are beyond PSE's control and create variability and volatility in rates for customers if not deferred.

Pursuant to Docket UE-040641, PSE is allowed to defer storm costs associated with days that exceed the IEEE Standard 1366 definition of a major event day threshold value, T_{MED}, which is based on values of daily System Average Interruption Duration Index ("SAIDI") for the previous five years. The major event day threshold is defined as 2.5 standard deviations from the average daily SAIDI. Additionally, in Docket UE-170033, an additional condition was added

requiring that the qualifying event must exceed a total cost of $500,000 in order to defer under the Storm Deferral Mechanism.

Only incremental transmission and distribution electric system repair costs incurred by PSE during a qualifying storm event may be deferred such as overtime pay for employees, outside contractor costs, and stores material and material overheads, to name a few. Straight-time labor costs associated with professional engineers that normally do not charge time to work orders, straight-time labor costs for stores personnel or fleet services personnel are all examples of costs that are not deferred because they are already included in customer rates.

The following is a summary of the qualifying 2017, 2018 and 2019 (through February) events that PSE's customers experienced, and which meet the criteria of the Storm Deferral Mechanism. The 2019 events are included to support the Prefiled Direct Testimony of Susan E. Free, Exh. SEF-1T, regarding the proposed amortization of these storm costs.

II. 2017 WEATHER EVENTS

Q. Please describe the 2017 weather events that met the storm deferral criteria.

A. PSE and its customers experienced seven IEEE Standard 1366 qualifying storm events and four non-qualifying storm events in the calendar year 2017. Four qualifying events, February 4–11, April 7–9, May 4–7, and May 23–24, were approved for recovery in the 2017 general rate case and will not be discussed.

A. October 18–19

A High Wind Warning was in effect for areas north of Everett including wind gusts up to 60 miles per hour as well as a high wind advisory for areas south of Everett to Olympia with gusts up to 45 miles per hour. At the peak of the storm, approximately 76,797 customers were without power which included 404 outage incidents with eight transmission lines and seven substations impacted. The event SAIDI was 16.96 with October 18 experiencing a daily SAIDI of 21.0, exceeding PSE's T_{MED} of 6.72 minutes for a qualifying event.

B. November 13–16

High winds impacted much of our service territory, including our northern counties, north and south King County, and southern and western territories. PSE restored power to 242,195 customers as a result of 958 outage incidents. The storm affected 12 transmission lines and five substations. The National Weather Service reported peak gusts up to 63 miles per hour with most areas seeing gusts around 50 miles per hour. High winds were accompanied by heavy rains affecting Whatcom, Skagit, Island, King, Thurston and Kitsap Counties. At the highpoint, over 60 crews were working to restore power to customers impacted by the storm. The event SAIDI was 67.16 with November 13 experiencing a daily SAIDI of 64.30, exceeding PSE's T_{MED} of 6.72 minutes for a qualifying event.

C. December 29, 2017–January 6, 2018

A wintry mix of snow, freezing rain and local sleet impacted our north King County and northern service territories. Our northern territory saw the highest impacts due to heavy ice, in some places greater than an inch of ice thickness was discovered on downed conductor. The stress placed on our lines by the ice resulted in approximately 40 broken poles and 30,000 feet of line on the ground. Heavy ice on the roads made damage assessment and crew work difficult and PSE restored power to over 89,313 customers as a result of 544 outage incidents. The northern ice storm affected three transmission lines and no substations. At the highpoint, 35 crews were working to restore power to customers impacted by the storm. The event SAIDI was 24.70 with December 29 experiencing a daily SAIDI of 28.90, exceeding PSE's T_{MED} of 6.72 minutes for a qualifying event.

III. 2018 WEATHER EVENTS

Q. Please describe the 2018 weather events that met the storm deferral criteria.

A. PSE and its customers experienced three IEEE Standard 1366 qualifying storm events and one non-qualifying storm events in the 2018 calendar year.

A. February 17–20

On February 17, PSE experienced upwards of 60 mile-per-hour wind gusts peaking first near 1:00 p.m. allowing for some restoration. However, the wind advisory was later upgraded as winds continued to blow peaking again near 5:00 p.m. on February 18. The storm caused the heaviest damage in Whatcom, Skagit,

Island, south King, Thurston and Kitsap Counties and Vashon Island with six transmission lines and 16 substations affected. Over the course of the event, 179,312 customers were without power through 759 outage incidents. At the highpoint, 47 crews were working to restore power to customers impacted by the storm. The event SAIDI was 46.22 with February 17 experiencing a daily SAIDI of 16.48, exceeding PSE's T_{MED} of 6.73 minutes for a qualifying event.

B. December 14–16

On December 14, PSE experienced upwards of 80 mile-per-hour wind gusts across nearly all of PSE's service territory peaking near midnight. The storm caused the heaviest damage in northern King County and Kitsap County with 19 transmission lines and nine substations affected. By evening, the high wind warning had expired, and PSE began damage assessing and restoring power. Over the course of the event, PSE restored power to 150,290 customers through 566 outage incidents. At the highpoint, 47 crews were working to restore power to customers impacted by the storm. The event SAIDI was 44.28 with December 14 experiencing a daily SAIDI of 42.10, exceeding PSE's T_{MED} of 6.73 minutes for a qualifying event.

C. December 20–27

On December 20, PSE experienced upwards of 50 to 55 mile-per-hour winds, across most all of PSE's service territory. The storm caused the heaviest damage in Kitsap, Island, Skagit and Whatcom Counties with 31 transmission lines and 12

substations affected. Over the course of the event, PSE restored power to 266,128 customers through 1,445 outage incidents. At the highpoint, 93 crews were working to restore power to customers impacted by the storm. The event SAIDI was 188.03 with December 20 experiencing a daily SAIDI of 173.79, exceeding PSE's T_{MED} of 6.73 minutes for a qualifying event.

IV. 2019 WEATHER EVENTS

Q. Please describe the 2019 weather events that met the storm deferral criteria.

A. PSE and its customers experienced three IEEE Standard 1366 qualifying storm events and no non-qualifying storm events through February 2019.

A. January 6–10

On January 6, PSE experienced wind followed by snow, impacting all of PSE's electric service territory in western Washington. The storm caused the heaviest damage in King, Pierce and Thurston Counties with 32 transmission lines and 20 substations affected. Over the course of the event, PSE restored power to 346,766 customers through 1,415 outage incidents. At the highpoint, 99 crews were working to restore power to customers impacted by the storm. The event SAIDI was 241.62 with January 6 experiencing a daily SAIDI of 237.09, exceeding PSE's T_{MED} of 6.91 minutes for a qualifying event.

B. February 4–5

On February 4, PSE experienced wind followed by snow and cold temperatures in areas of PSE's electric service territory. The storm caused the heaviest damage in

Whatcom, Skagit and Island Counties with four substations affected. Over the course of the event, PSE restored power to 39,653 customers through 211 outage incidents. At the highpoint, 13 crews were working to restore power to customers impacted by the storm. The event SAIDI was 6.98 with February 4 experiencing a daily SAIDI of 7.56, exceeding PSE's T_{MED} of 6.91 minutes for a qualifying event.

C. February 8–15

On February 8, PSE experienced wind, snow and ice across all of PSE's electric service territory in western Washington. The system wide event impacted 13 transmission lines and four substations. Over the course of the event, PSE restored power to 357,536 customers through 2,268 outage incidents. At the highpoint, 115 crews were working to restore power to customers impacted by the storm. The event SAIDI was 172.30 with February 9 experiencing a daily SAIDI of 61.23, exceeding PSE's T_{MED} of 6.91 minutes for a qualifying event.