Report to the Washington Utilities and Transportation Commission

Electric Service Reliability - Major Event Report

Event Date:	November 27-28, 2019
Date Submitted:	January 8, 2020
Primary Affected Locations:	Yakima and Sunnyside
Primary Cause:	Wind and Trees
Exclude from Reporting Status:	Yes
Report Prepared by:	April Brewer
Report Approved by:	Heide Caswell / Carrie Laird / Chad Ooten

Event Description and Restoration Summary

Event Outage Summary	
# Interruptions (sustained)	104
Total Customer Interrupted (sustained)	5,382
Total Customer Minutes Lost	1,689,555
State Event SAIDI	12.35 Minutes
CAIDI	314
Major Event Start	11/27/2019 12:00 a.m.
Major Event End	11/28/2019 10:31 p.m.

On the morning of November 27, customers in Washington began experiencing outages when a wind storm severely impacted reliability in Yakima and Sunnyside. The storm produced sustained winds from the northeast, with gusts between 40 to 50 MPH. Although the wind directions can vary throughout the year in this region, it is more common for this region to see prevailing winds from the southwest. The irregular northeasterly direction of the wind coupled with high wind gusts caused significant damage to facilities, downing equipment and trees under the abnormal conditions.

During the event vegetation-related interference (essentially wind-borne debris) was the most significant cause of outages. Downed trees and broken branches caused 51% of all customer minutes lost and 38% of all customer outages. In addition to vegetation interference, wind was the second most significant cause of customer minutes lost, accounting for 29% of the total event minutes and 38% of all customer outages. The third most impactful cause of outages during the event were intentional outages to clear trouble, accounting for 11% of all customer minutes lost and 17% of all customer outages; these outages are taken in order to limit safety risks during the repair and restoration process.

Approximately 5,400 customer outages were experienced, some of which included multiple outages over the duration of the storm (see figure 1 below). The number of concurrent outages during the event peaked on the 27th at 5:16 p.m. simultaneous to the peak customers out, when 3,377 customers were out of power. Outage durations during the event ranged from 5 minutes to 23 hours 28 minutes, with an average cumulative outage duration of 5 hours 14 minutes (see figure 2).

Over the course of the almost two day event over 100 separate outage events were recorded. All available internal personnel were utilized and augmented by contractors. Due to other weather impacts across the company no out-of-area internal crews were deployed in the area. However, managers staffed the office to assist logistics, clerks, and general foreman in directing resources to the largest and oldest outages first. Substation operations and estimators assisted the field in assessing damaged equipment. Internal crews were broken down into single responders as an additional five external contract crews were brought in to assist with field restoration activities which required a crew.

High, persistent winds, cold temperatures and downed trees and branches, all slowed restoration activities. Further impacts were experienced due to impeded access that often required the removal of area debris before being able to access and repair damaged equipment. Regional personnel functioning in support roles enabled crews to focus on clearing debris and restoring outages, which was very critical during the protracted wind event.

To date, there have been no company or commission customer complaints made regarding the major event.

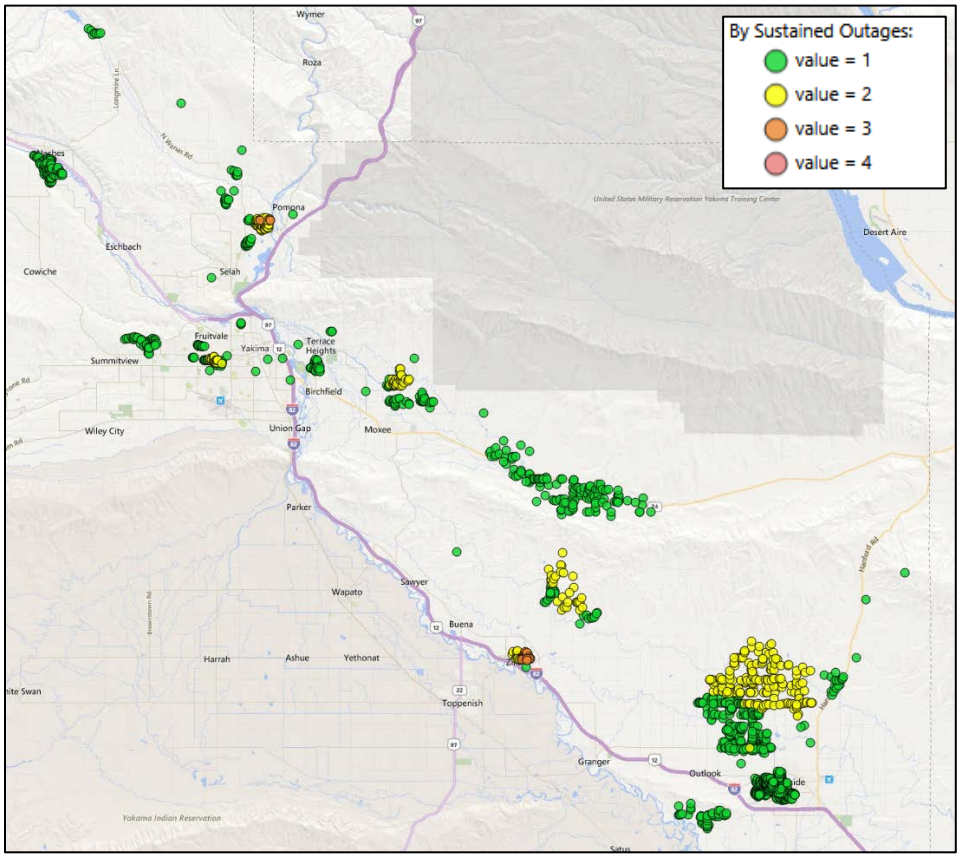


Figure 1. Number of sustained outages experience by customers during the event.

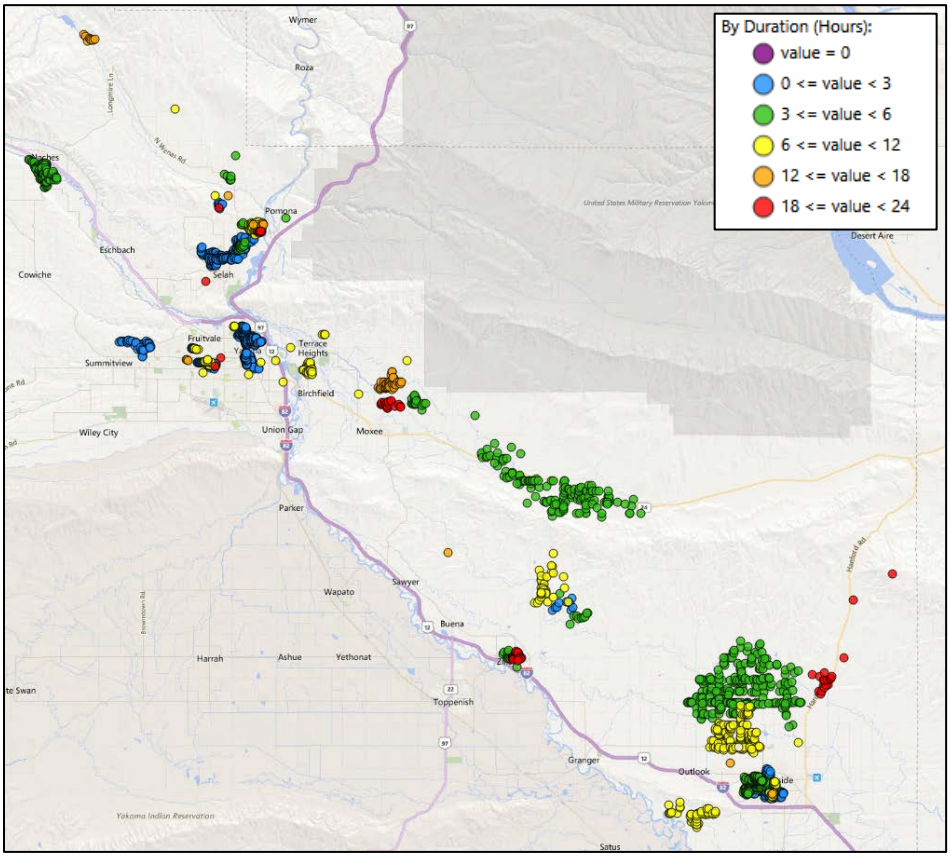


Figure 2. Combined total outage duration, by hours, experience by customers during the event.

Restoration Intervals

Total Customers Sustained	< 3 Hrs.	3 - 24 Hrs.	24+ Hrs.
5,382	2,346	3,036	0

Restoration Resources

Personnel Resources	
Troubleman/Assessors	5
Lineman	9
Foreman	4
External (contract) crewmembers	31
Substation crewmembers	4
Estimators	3
# Support staff	1
Lineman Representative	2
Assessor	Varied based on resources above
Serviceman	3
Warehouseman	2
Tree crewman	6
TOTAL	**70**

Materials	
# Distribution Poles	7
# Approx. conductor Line (feet)	11,410 ft.
# Transformers	6
# Crossarms	7
Insulators	60
Cutouts	15
Line fuses	20
Line splices	88

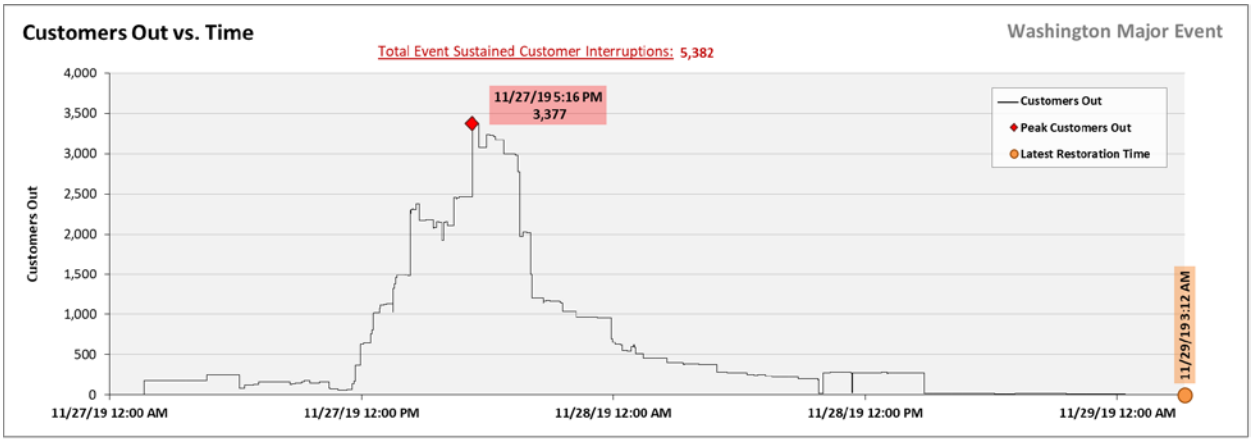
State Estimated Major Event Costs

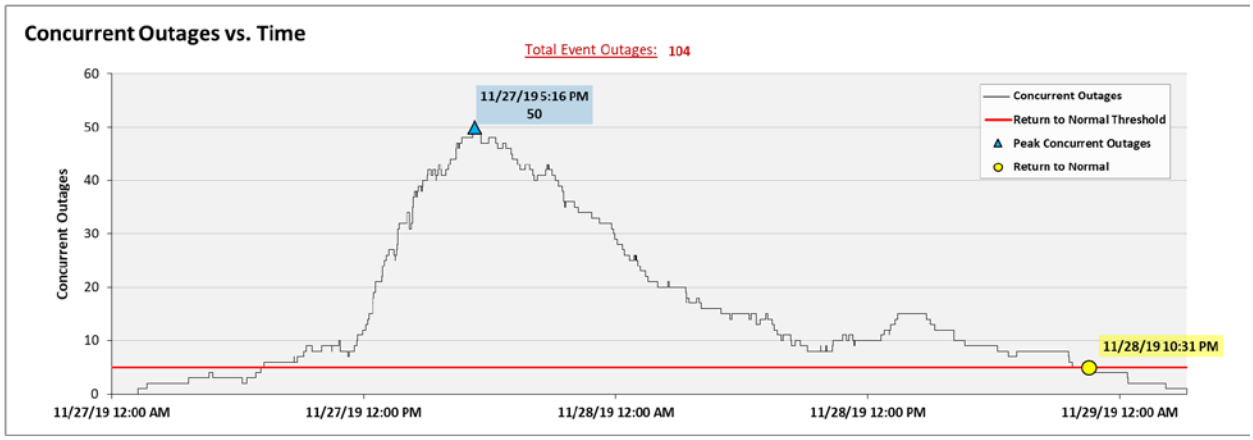
Estimate $	Labor	Contracts	Material	Overheads	Total
Capital	$10,070	$114,148	$13,415	$10,795	**$148,428**
Expense	$98,726	$66,380	$2,934	$4,224	**$172,264**
Total	**$108,796**	**$180,528**	**$16,349**	**$15,019**	**$320,692**

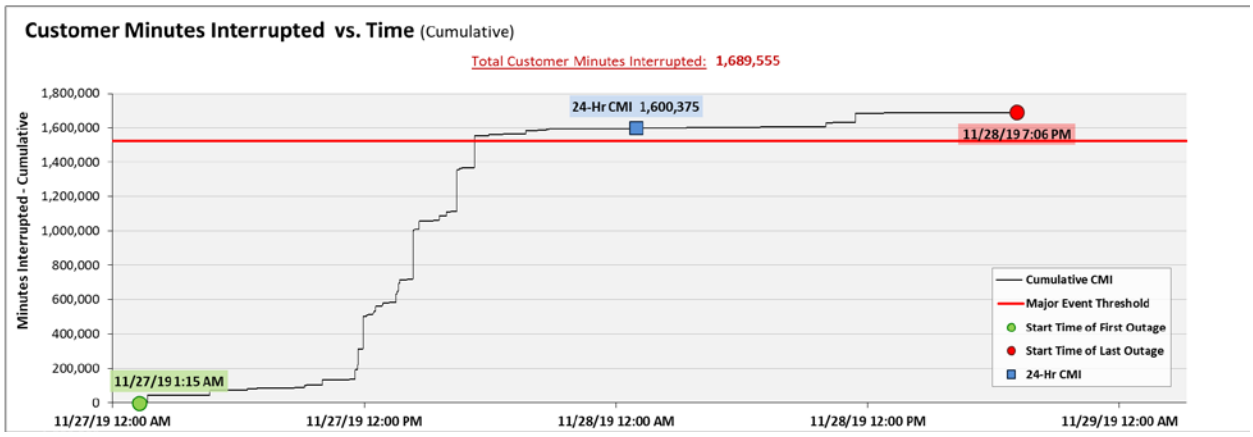
Major Event Declaration

Pacific Power is requesting designation of this event and its consequences to be classified as a "Major Event" for exclusion from network performance reporting with the IEEE 1366-2003/2012. This major event exceeded the company's 2019 Washington threshold of 1,512,795 customer minutes lost (11.13 state SAIDI minutes) in a 24-hour period.

Event Detail







SAIDI, SAIFI, CAIDI by Reliability Reporting Region

Please see the attached system-generated reports.