Report to the Washington Utilities and Transportation Commission

Electric Service Reliability - Major Event Report

Event Date:	November 7, 2017
Date Submitted:	December 13, 2017
Primary Affected Locations:	Walla Walla
Primary Cause:	Loss of Transmission
Exclude from Reporting Status:	Yes
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Report Approved by:	Heide Caswell / Kevin Putnam / David O'Neil / Pablo Arronte

Event Description

On November 7, 2017, Washington experienced a major event when a 69 kV conductor splice failed. The failure caused the Walla Walla Substation circuit breaker to open, de-energizing five substations which feed 14 circuits and serve over 17,800 customers. Outage durations ranged from 10 minutes to 6 hours 19 minutes.

Event Outage Summary	
# Interruptions (sustained)	20
Total Customer Interrupted (sustained)	20,078
Total Customer Minutes Lost	3,192,035
State Event SAIDI	23.8 Minutes
CAIDI	159
Major Event Start	11/7/17 12:00 AM
Major Event End	11/8/17 12:00 AM

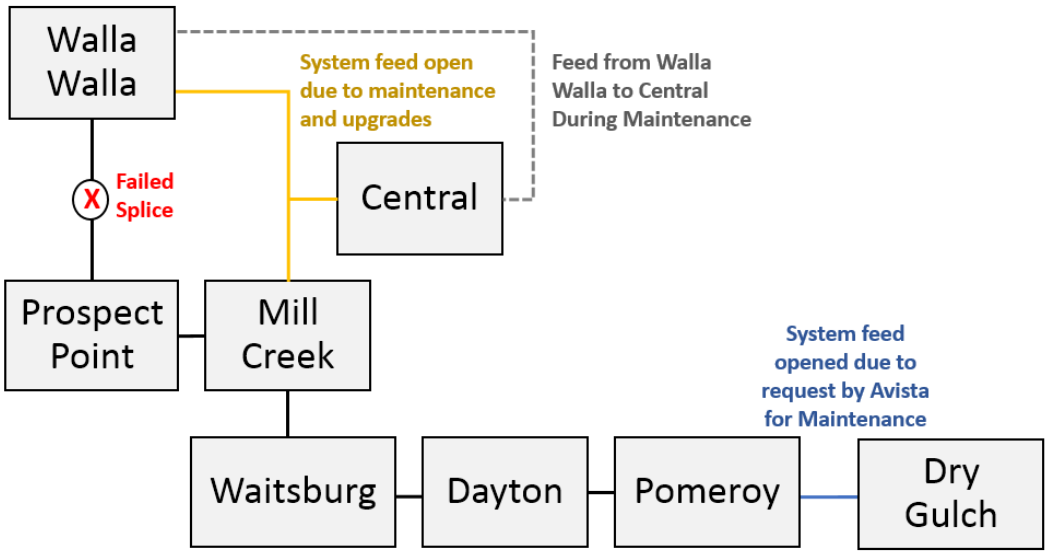
Restoration Summary

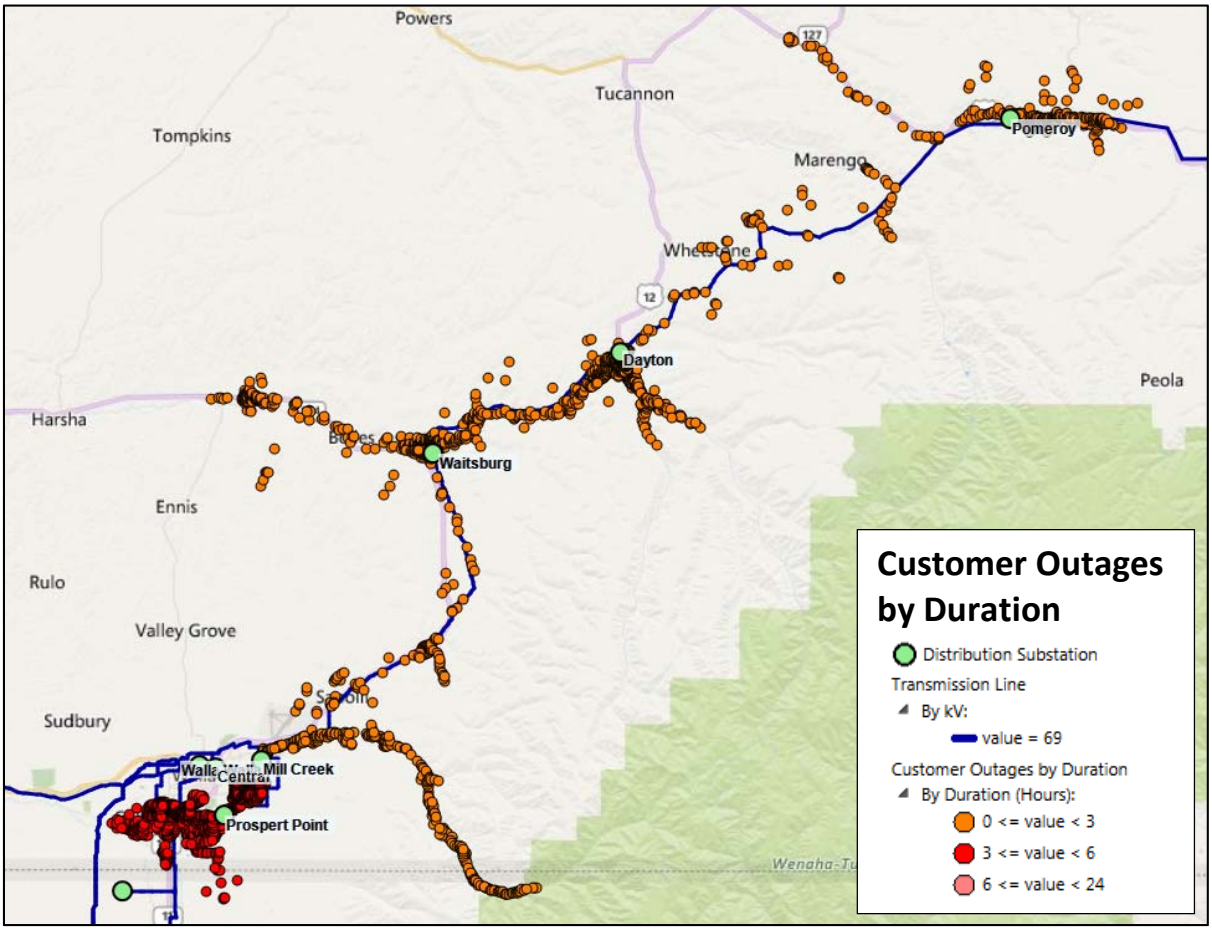
At 8:16 AM on November 7, 2017, Walla Walla, Washington, experienced a loss of transmission line event when a splice on the 69 kV line from the Walla Walla Substation to the Prospect Point substation failed. The event affected five substation; Prospect Point, Mill Creek, Waitsburg, Dayton, and Pomeroy. On November 6th the network was set into an abnormal configuration while maintenance and upgrades were being performed at the Central Substation. Under normal configuration Central Substation is in a loop configuration connecting feed to the five affected substations through the Mill Creek Substation. In addition to the work being performed at Central on the breaker serving the Mill Creek Substation, the 69 kV line between Pomeroy and Dry Gulch substations was de-energized at the request of Avista for mitigation

purposes while Avista performed work on the neighboring 230 kV line. This configuration put the five affected substations in a radial configuration.

When the conductor splice failed, dispatch quickly determined that feeds from the Pomeroy substation could be used and closed switches, energizing Pomeroy, Dayton, and Waitsburg Substation though SCADA, which restored power to 4,209 customers after 10 minutes. Restoration to the Mill Creek and Prospect substations required more work as crews had to open jumpers to isolate the Central Substation from Walla Walla-Mill Creek 69kV line. Supply from Walla Walla substation to Mill Creek was then re-established, restoring power to an additional 8,559 customers starting after 161 minutes. Throughout the restoration process operations incorporated concerns for in-rush current and cold load pickup in order to guide how rapidly individual circuits and groups of customers were restored. By 11:53 AM 93% of all customer outages were restored. At 2:05 PM the failed splice on the Walla Walla-Prospect Point line was repaired, fully energizing Prospect Point substation. At 2:35 PM restoration activities were completed. The below diagram outlines the system abnormal configurations during the event.

There were no company or commission customer complaints made regarding the major event.




Powers
Tucannon
Tompkins
Pomeroy
Marengo
Dayton
Peola
Harsha
Waitsburg
Ennis
Rulo
Valley Grove
Sudbury
Mill Creek
Prospert Point
Customer Outages by Duration
Distribution Substation
Transmission Line
By kV:
value = 69
Customer Outages by Duration
By Duration (Hours):
0 <= value < 3
3 <= value < 6
6 <= value < 24

Restoration Intervals

Total Customers Sustained	< 3 Hrs.	3 - 24 Hrs.	24+ Hrs.
20,078	12,779	7,299	0

Restoration Resources [1]

Personnel Resources	
Estimator	1
Engineer	1
Relay Tech	3
Substation Journeyman	3
Field Journeyman	10
TOTAL	**18**

State Estimated Major Event Costs [1]

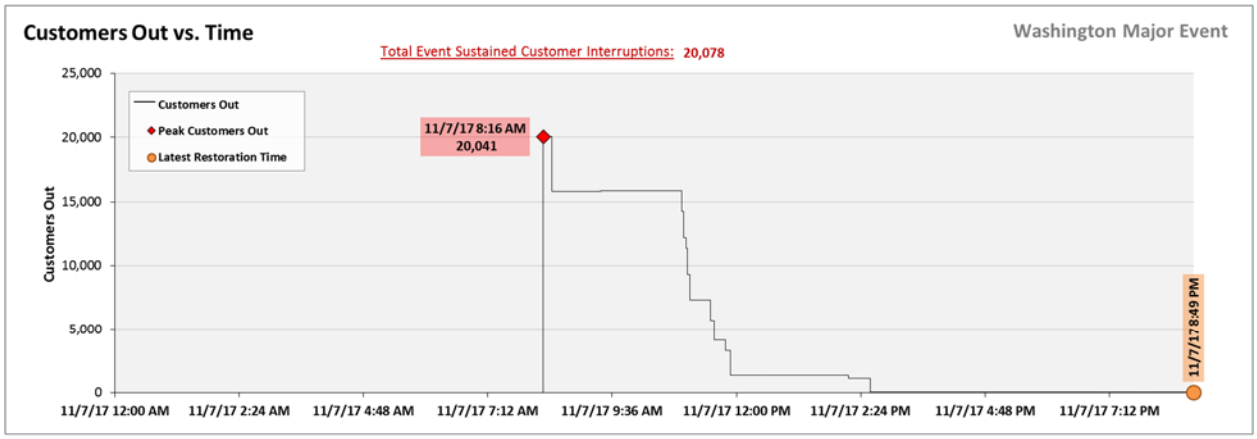
Estimate $	Labor	Material	Overhead	Total
Capital	$17,855	$0	$1,074	**$18,929**
Expense	$15,982	$0	$0	**$15,982**
Total	**$33,837**	**$0**	**$1,074**	**$34,911**

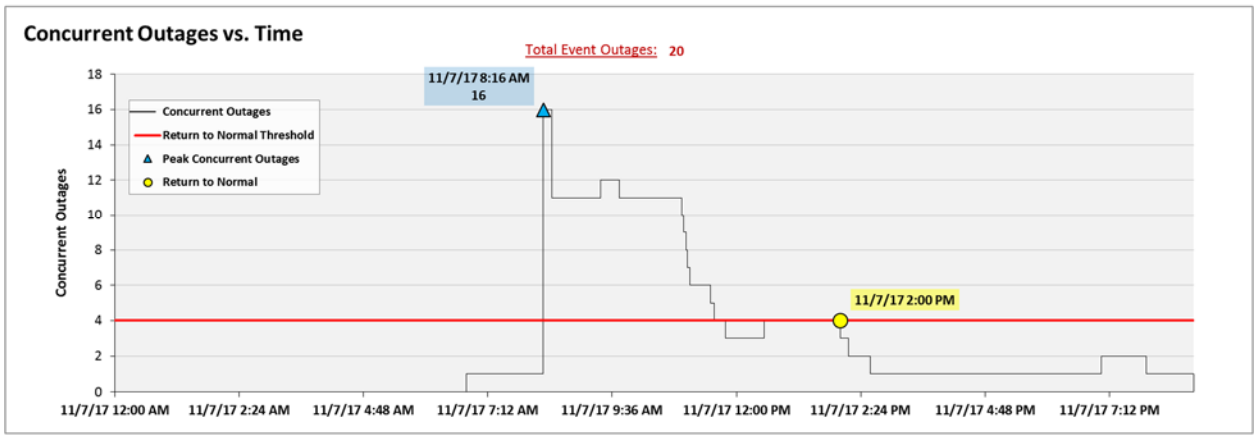
Major Event Declaration

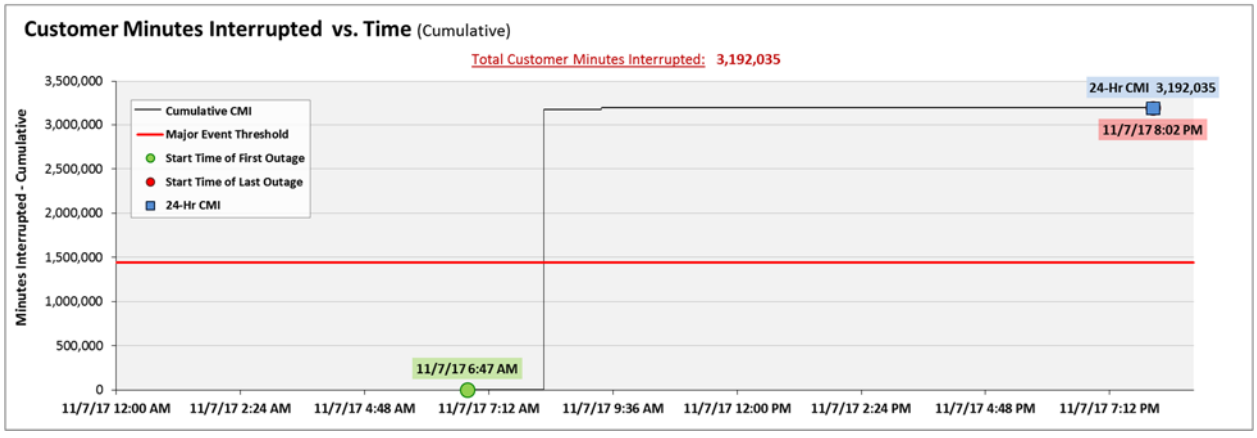
Pacific Power is requesting designation of this event and its consequences to be classified as a "Major Event" for exclusion from network performance reporting with the IEEE 1366-2003/2012. This major event exceeded the company's 2017 Washington threshold of 1,444,820 customer minutes lost (10.77 state SAIDI minutes) in a 24-hour period.

[1] Data provided represents specific system records for personnel, resources, and costs. However additional resources whose participation did not get individually captured in transaction recording systems were utilized during the event, thus the data presented here effectively understates the resources, including cost, involved in restoring the system to normal.

Event Detail







SAIDI, SAIFI, CAIDI by Reliability Reporting Region

Please see the attached system-generated reports.