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REPORT NAME: Major Event Report

COMPANY NAME: Pacific Power

DOES REPORT CONTAIN CONFIDENTIAL INFORMATION? No Yes

If yes, please submit only the cover letter electronically. Submit confidential information as directed in OAR 860-001-0070 or the terms of an applicable protective order.

If known, please select designation: RE (Electric) RG (Gas) RW (Water) RO (Other)

Report is required by: OAR OAR 860-023-0161

Statute

Order

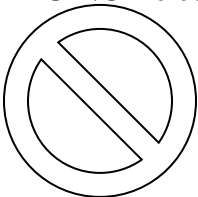
Other

Is this report associated with a specific docket/case? No Yes

If yes, enter docket number: RE 107

List applicable Key Words for this report to facilitate electronic search:
Major Event Report

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- Annual Fee Statement form and payment remittance or
- OUS or RSPF Surcharge form or surcharge remittance or
- Any other Telecommunications Reporting or
- Any daily safety or safety incident reports or
- Accident reports required by ORS 654.715

Please file the above reports according to their individual instructions.



825 NE Multnomah, Suite 2000
Portland, Oregon 97232

January 25, 2019

VIA ELECTRONIC FILING

Public Utility Commission of Oregon
201 High Street SE, Suite 100
Salem, OR 97301-3398

Attn: Filing Center

RE: RE 107—PacifiCorp Major Event Report

In compliance with OAR 860-023-0161, PacifiCorp d/b/a Pacific Power submits the enclosed report describing a major event that occurred December 14–15, 2018, in the company's Roseburg and Coos Bay/Coquille reliability reporting region.

PacifiCorp requests to exclude the outage information for this event from both its network performance reporting and customer guarantee failure payments.

If you require further information regarding this report, please contact Heide Caswell, Director, Engineering and Environmental, at (503) 813-6216.

Sincerely,

A handwritten signature in black ink, appearing to read "Etta Lockey".

Etta Lockey
Vice President, Regulation

Enclosure

cc: Lori Koho/Administrator, Safety, Reliability, and Security Division

Report to the Oregon Public Utility Commission Electric Service Reliability - Major Event Report

Event Date: December 14-15, 2018

Date Submitted: January 25, 2019

Primary Affected Locations: Oregon
(Roseburg and Coos Bay/Coquille)

Primary Cause: Wind Storm/Trees

Exclude from Reporting Status: Yes

Report Prepared by: April Brewer

Report Approved by: Heide Caswell/Larry Young/David O’Neill

Event Description

On the morning of December 14, 2018, a storm bringing rain and high winds blew through Oregon severely impacting services, causing more than 145 outage events. The outages heavily impacted customers in Roseburg and Coos Bay where winds were blowing at 40-45 mph with gusts measured as high as 75 mph. Additionally, the remainder of Oregon operating areas also experienced weather-related outages. Tree and wind were the cause of 77% of all customer minutes lost and 84% of all customer interruption events. At 1:28 pm on December 14th, the total customers out peaked at 24,233 customers. By 6:32 pm the following day the number of outage events had returned to normal.

Event Outage Summary	
# Interruptions (sustained)	250
Total Customer Interrupted (sustained)	42,434
Total Customer Minutes Lost	13,083,065
State Event SAIDI	21.54 Minutes
CAIDI	308
Major Event Start	12/14/18 5:11 AM
Major Event End	12/15/18 6:32 PM

Restoration Summary

During the event, 145 sustained outages occurred, causing more than 42,000 customer interruptions. Of these outage events, 54 occurred in Roseburg and 69 occurred in Coos Bay. The large volume of outages heavily impacted restoration times, as crews and dispatch worked to identify and restore power in areas which affected the greatest number of customers. Restoration activities were also slowed as line crews needed additional support, such as vegetation crews and flaggers, to assistance in clearing uprooted trees and branches entangled in lines

before repairing damaged equipment. In addition to the local crews and resources both internal and external crews were dispatched from across the region to assist. Throughout the restoration effort crews battled downed trees and saturated soil conditions with limited daylight hours and poor visibility.

The rural location, terrain, and heavily forested areas that exist in both these service territories can often make accessing transmission and distribution lines difficult. Both Roseburg and Coos Bay experienced outages in these remote locations. In Roseburg, trees took down several spans of conductor and damaged equipment on a 69 kV tap having limited access where bucket trucks could not be used. This extensively slowed the restoration for the 2,344 customers who were served from this tap. In addition to the tap line outage, there were a handful of other downed lines in the Roseburg operating area which experienced similar difficulties and delays in accessing and restoring damaged facilities. Coos Bay experienced many of the same issues, dealing with some very rural locations with lots of trees and steep banks, which led to tree uprooting during the severe winds. In both of these locations tree and line crews worked closely together to systematically clear access and restore power to customers.

Over 224 Pacific Power employees worked to restore power during the event, including linemen, tree trimmers, and support staff. In addition to internal personnel several contract crews were also utilized during the event. Over 18,000ft of conductor, several distribution and transmission poles, and hundreds of equipment pieces were used to repair and restore power.

During the major event, 45% of customers outages were restored within 3 hours, 55% were restored within a day and 95 customers were out over 24 hours. There was one company and one commission customer complaint made regarding the major event.

Figure 1 displays customer outages during the event as shown by their duration in reference to the restoration stages.

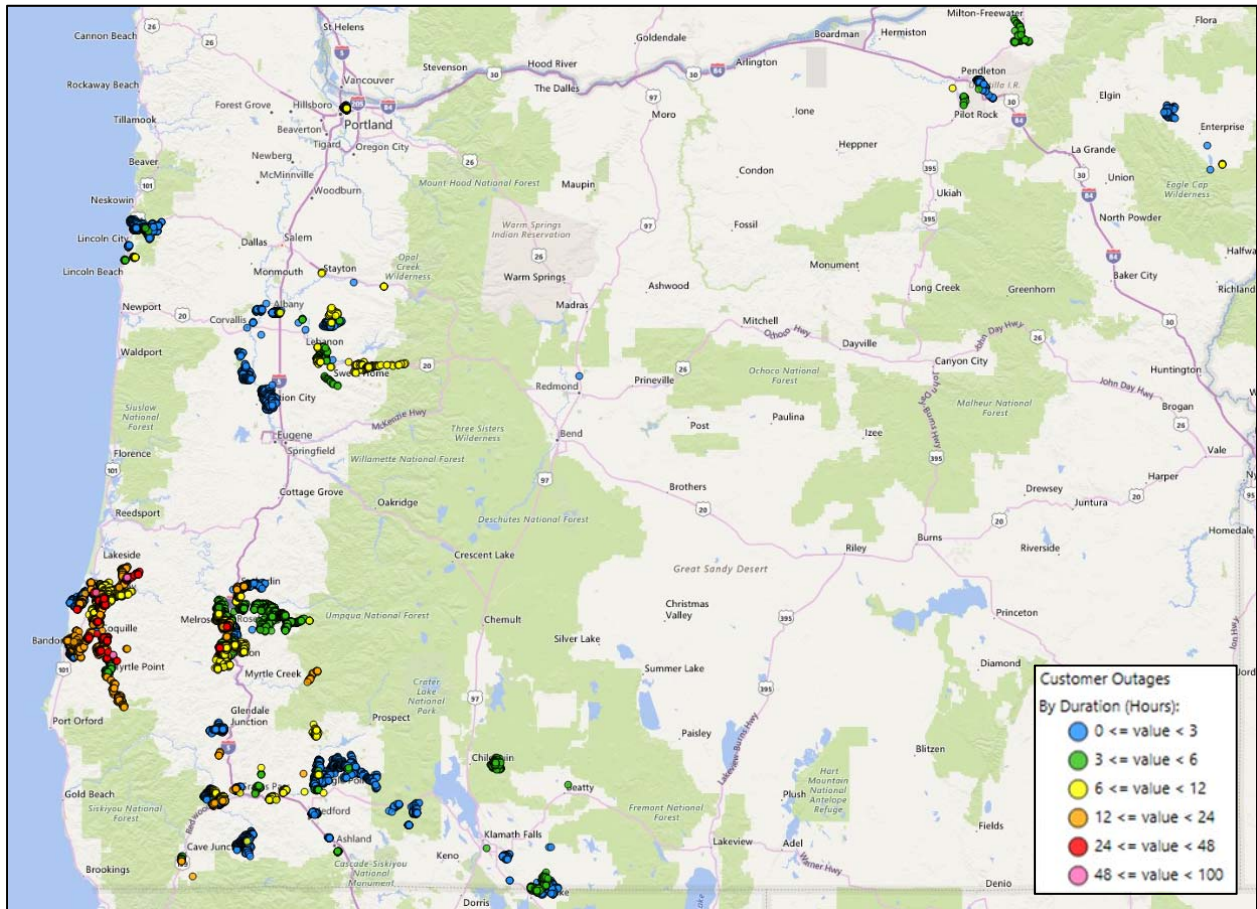


Figure 1 Customer outages by duration

Restoration Intervals for Customers served in Oregon

Total Customers Sustained	< 3 Hrs.	3 - 24 Hrs.	24-48 Hrs.	48-72 Hrs.
42,434	19,006	23,333	89	6

Restoration Resources ¹

Personnel Resources	
Substation Crewmembers	8
Line Crewman	157
Warehouseman	12
Estimator	11
General	36

¹ Data provided represents specific system records for personnel, resources, and costs; and is specific to the event, not inclusive of state delineation. 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.

Materials	
Distribution Poles	14
Transmission Poles	3
Approximate Conductor line (feet)	18,000
Transformers	22
Crossarms	15
Insulators	116
Cutouts	85
Line Fuses	85
Line Splices	212

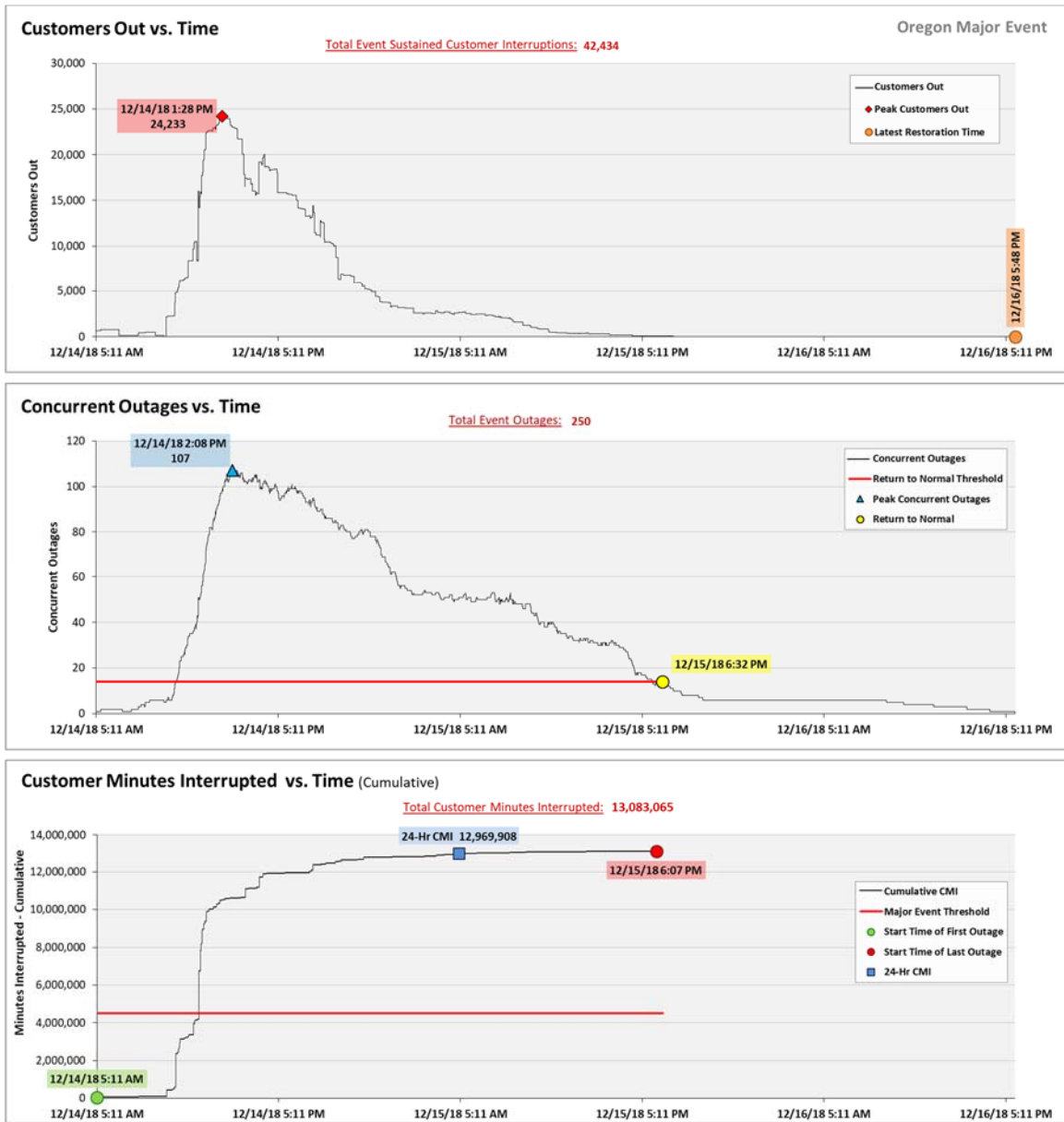
State Estimated Major Event Costs ²

Estimate \$	Labor	Contracts	Materials	Overheads	TOTAL
Capital	\$64,000	\$60,000	\$44,000	\$7,000	\$168,000
Expense	\$518,000	\$322,000	\$16,000	\$33,000	\$856,000
Total	\$582,000	\$382,000	\$60,000	\$40,000	\$1,024,000

Major Event Declaration

PacifiCorp designates these events and the consequences thereof a major event in accordance with OAR 860-023-0161. This is a major event because it exceeded the design or operating limits of the system, and the Major Event Threshold for Oregon as calculated annually by the company according to IEEE 1366-2003 methodology (commonly referred to as the 2.5 beta method). The company's 2018 Oregon reliability threshold is 4,501,730 customer minutes lost (7.41 Oregon SAIDI minutes) in a 24-hour period.

Event Detail



SAIDI, SAIFI, CAIDI by Reliability Reporting Region

Please see the attached system-generated reports.

PacifiCorp Major Event Report
Customer Analysis

Oregon		Customer Analysis 12/14/2018 through 12/15/2018					Customers Restored by Intervals								Major Event Only - metric by operating area customer counts		
PacifiCorp Major Events Report Customer Analysis*		Sustained Customers Off	% Sustained Customers Off	CML	Number of Sustained Interruptions	Customer Count	< 5 min	5 min - 3 hrs	3 hrs - 24 hrs	24 hrs - 48 hrs	48 hrs - 72 hrs	72 hrs - 96 hrs	96 + hrs	% Sustained Customers Restored in 3 Hours PS4	SAIDI	SAIFI	CAIDI
PC	PACIFICORP	42,434	2%	13,083,065	250	1,933,597	23,125	19,006	23,333	89	6	-	-	45%	6.77	0.022	308
PP	Pacific Power	42,434	5%	13,083,065	250	790,086	23,125	19,006	23,333	89	6	-	-	45%	16.56	0.054	308
OR	Oregon	42,434	7%	13,083,065	250	607,462	23,125	19,006	23,333	89	6	-	-	45%	21.54	0.070	308
OR	ALBANY	357	1%	60,204	7	31,783	5,713	170	187	-	-	-	-	48%	1.89	0.011	169
OR	BEND/REDMOND	4	0%	593	3	65,186	-	3	1	-	-	-	-	75%	0.01	0.000	148
OR	CLATSOP (ASTORIA)	120	0%	17,809	4	24,657	-	86	34	-	-	-	-	72%	0.72	0.005	148
OR	COOS BAY/COQUILLE	9,948	38%	4,837,355	69	26,409	4,324	2,924	6,944	74	6	-	-	29%	183.17	0.377	486
OR	CORVALLIS	64	0%	3,905	4	29,657	-	64	-	-	-	-	-	100%	0.13	0.002	61
OR	COTTAGE GROVE/J.CITY	339	3%	35,538	4	11,221	1,856	339	-	-	-	-	-	100%	3.17	0.030	105
OR	DALLAS/INDEPENDENCE	1	0%	157	1	15,189	-	1	-	-	-	-	-	100%	0.01	0.000	157
OR	ENTERPRISE	73	1%	7,781	4	5,432	-	68	5	-	-	-	-	93%	1.43	0.013	107
OR	GRANTS PASS	3,871	7%	719,206	20	51,864	1,129	2,998	873	-	-	-	-	77%	13.87	0.075	186
OR	KLAMATH FALLS	1,725	5%	240,677	14	37,704	4	1,256	469	-	-	-	-	73%	6.38	0.046	140
OR	LEBANON	1,306	6%	291,814	19	20,738	-	565	741	-	-	-	-	43%	14.07	0.063	223
OR	LINCOLN CITY	2,390	20%	181,809	14	12,172	-	2,071	319	-	-	-	-	87%	14.94	0.196	76
OR	MEDFORD	248	0%	106,243	16	89,904	4,898	22	226	-	-	-	-	9%	1.18	0.003	428
OR	PENDLETON	477	4%	41,686	7	12,915	-	449	28	-	-	-	-	94%	3.23	0.037	87
OR	PORTLAND	3,463	4%	551,835	4	81,104	-	2,196	1,267	-	-	-	-	63%	6.80	0.043	159
OR	ROSEBURG/MYRTLECREEK	17,920	42%	5,928,871	53	42,616	5,201	5,790	12,115	15	-	-	-	32%	139.12	0.420	331
OR	STAYTON	127	1%	57,371	6	13,578	-	4	123	-	-	-	-	3%	4.23	0.009	452
OR	WALLA WALLA	1	0%	211	1	1,892	-	-	1	-	-	-	-	0%	0.11	0.001	211

*Only current event specific metric impact shown. Does not include values from other events which may have occurred in other regions during the same time period.

Customer Interrupted by Date 12/14/2018 through 12/15/2018		Customers Restored by Intervals								Major Event Only - metric by state customer counts						
Date*	Sustained Customers Off	% Sustained Customers Off	CML	Number of Sustained Interruptions	Average Customer Count	< 5 min	5 min - 3 hrs	3 hrs - 24 hrs	24 hrs - 48 hrs	48 hrs - 72 hrs	72 hrs - 96 hrs	96 + hrs	% Sustained Customers Restored in 3 Hours PS4	SAIDI	SAIFI	CAIDI
12/14/2018	40,671	7%	12,772,161	191	607,462	15,765	18,202	22,374	89	6	-	-	45%	21.03	0.067	314
12/15/2018	1,763	0%	310,904	59	607,462	7,360	804	959	-	-	-	-	46%	0.51	0.003	176

Data as of
1/24/2019

PacifiCorp Major Event Report
Customer Analysis

	Oregon	Event 12/14/18 through 12/15/18						Month 12/01/18 through 12/31/18						YTD FY2019 01/01/18 through 12/31/18					
		Major Events Included			Major Event Excluded			Major Events Included			Major Events Excluded*			Major Events Included			Major Events Excluded*		
		SAIDI	SAIFI	CAIDI	SAIDI	SAIFI	CAIDI	SAIDI	SAIFI	CAIDI	SAIDI	SAIFI	CAIDI	SAIDI	SAIFI	CAIDI	SAIDI	SAIFI	CAIDI
	PacifiCorp Major Events Report SSC by State																		
PC	PACIFICORP	7.25	0.024	302	0.16	0.001	156	21.35	0.148	144	6.28	0.084	75	144.51	1.286	112	114.62	1.131	101
PP	Pacific Power	17.64	0.058	304	0.29	0.002	168	30.76	0.208	148	7.22	0.120	60	159.74	1.497	107	99.92	1.187	84
OR	Oregon	21.58	0.070	308	0.04	0.000	228	36.39	0.229	159	7.38	0.123	60	145.82	1.474	99	97.96	1.233	79
OR	ALBANY	0.10	0.001	169	-	-	-	0.18	0.001	163	0.06	0.000	177	6.93	0.048	144	6.82	0.047	144
OR	BEND/REDMOND	0.00	0.000	148	-	-	-	0.58	0.026	22	0.39	0.024	16	9.04	0.122	74	3.20	0.060	54
OR	CLATSOP (ASTORIA)	0.03	0.000	148	-	-	-	1.21	0.009	133	0.81	0.005	150	3.78	0.060	63	3.37	0.057	60
OR	COOS BAY/COQUILLE	7.96	0.016	486	-	-	-	11.61	0.028	416	0.25	0.002	143	18.36	0.133	138	7.01	0.107	66
OR	CORVALLIS	0.01	0.000	61	-	-	-	0.02	0.000	62	0.01	0.000	63	1.68	0.017	101	1.68	0.017	101
OR	COTTAGE GROVE/J.CITY	0.06	0.001	105	-	-	-	0.24	0.001	169	0.18	0.001	210	2.84	0.033	86	2.78	0.032	86
OR	DALLAS/INDEPENDENCE	0.01	0.000	181	0.01	0.000	182	0.26	0.006	47	0.11	0.005	22	3.62	0.063	57	3.48	0.063	55
OR	ENTERPRISE	0.01	0.000	107	-	-	-	0.07	0.002	41	0.06	0.002	36	0.87	0.013	69	0.86	0.013	68
OR	GRANTS PASS	1.18	0.006	186	-	-	-	2.15	0.061	35	0.70	0.054	13	28.40	0.435	65	19.23	0.377	51
OR	HERMISTON	-	-	-	-	-	-	0.27	0.001	204	0.27	0.001	204	2.13	0.009	239	0.81	0.006	134
OR	HOOD RIVER	-	-	-	-	-	-	0.70	0.003	266	0.70	0.003	266	2.28	0.017	136	2.28	0.017	136
OR	KLAMATH FALLS	0.40	0.003	140	-	-	-	0.61	0.004	140	0.21	0.001	140	6.10	0.065	94	4.80	0.058	83
OR	LAKEVIEW	-	-	-	-	-	-	0.00	0.000	269	0.00	0.000	269	0.40	0.003	117	0.40	0.003	117
OR	LEBANON	0.48	0.002	223	-	-	-	0.64	0.003	210	0.07	0.000	165	5.12	0.066	77	4.54	0.064	71
OR	LINCOLN CITY	0.30	0.004	76	-	-	-	2.73	0.022	125	0.34	0.005	64	4.93	0.040	123	2.53	0.023	108
OR	MADRAS	-	-	-	-	-	-	0.18	0.001	182	0.14	0.001	191	2.12	0.025	86	2.07	0.024	85
OR	MEDFORD	0.21	0.001	376	0.04	0.000	236	0.78	0.005	148	0.60	0.005	125	11.29	0.090	126	11.09	0.089	124
OR	PENDLETON	0.07	0.001	87	-	-	-	0.33	0.003	102	0.24	0.002	102	3.14	0.049	64	3.05	0.048	63
OR	PORTLAND	0.91	0.006	159	-	-	-	1.27	0.008	163	0.29	0.002	148	10.71	0.074	145	6.51	0.052	126
OR	ROSEBURG/MYRTLECREEK	9.76	0.029	331	-	-	-	10.22	0.034	300	0.23	0.001	326	15.27	0.083	184	5.27	0.050	106
OR	STAYTON	0.09	0.000	452	-	-	-	2.31	0.010	233	1.71	0.009	200	6.22	0.025	246	5.62	0.024	235
OR	WALLA WALLA	0.00	0.000	211	-	-	-	0.00	0.000	235	0.00	0.000	247	0.58	0.003	176	0.58	0.003	176

*may include other regional major event exclusions during the same period. Operating areas are calculated by the state frozen customer count metrics.

Data as/of
1/24/2019