



e-FILING REPORT COVER SHEET

COMPANY NAME:

DOES REPORT CONTAIN CONFIDENTIAL INFORMATION? No Yes If yes, submit a redacted public version (or a cover letter) by email. Submit the confidential information as directed in OAR 860-001-0070 or the terms of an applicable protective order.

Select report type: RE (Electric) RG (Gas) RW (Water) RT (Telecommunications)
 RO (Other, for example, industry safety information)

Did you previously file a similar report? No Yes, report docket number: RE 107

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

Statute

Order

Note: A one-time submission required by an order is a compliance filing and not a report (file compliance in the applicable docket)

Other

(For example, federal regulations, or requested by Staff)

Is this report associated with a specific docket/case? No Yes, docket number: RE 107

List Key Words for this report. We use these to improve search results.

Major Event Report

Send the completed Cover Sheet and the Report in an email addressed to PUC.FilingCenter@state.or.us

Send confidential information, voluminous reports, or energy utility Results of Operations Reports to PUC Filing Center, PO Box 1088, Salem, OR 97308-1088 or by delivery service to 201 High Street SE Suite 100, Salem, OR 97301.



825 NE Multnomah, Suite 2000
Portland, Oregon 97232

September 20, 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 August 9 – 10, 2019, in the company's central Oregon 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,

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:	August 9-10, 2019
Date Submitted:	September 20, 2019
Primary Affected Locations:	Central Oregon
Primary Cause:	Lightning
Exclude from Reporting Status:	Yes
Report Prepared by:	April Brewer
Report Approved by:	Heide Caswell / Jon Connelly / Milton Buker/ Pablo Arronte

Event Outage Summary	
# Interruptions (sustained)	38
Total Customer Interrupted (sustained)	2,741
Total Customer Minutes Lost	940,563
State Event SAIDI	1.52 Minutes
CAIDI	343
Major Event Start	8/9/19 6:08 PM
Major Event End	8/10/19 11:09 PM

Event Description and Restoration Summary

On August 9, 2019, Madras and Bend, Oregon, began experiencing a series of outages as a lightning storm passed through the area. On the evening of August 9th the storm began significantly impacting system operations. Crews worked throughout the evening to resolve the multiple outages which occurred over a span of 16 hours. On the evening of August 10th, just as the number of outage events had returned to normal, a lightning strike damaged equipment located just outside of the Overpass Substation.

A trouble-man responded to the outage and determined the problem to be a failed termination. Line crews were dispatched to repair the failed termination and attempted to re-energize, upon which time the substation breaker failed to close. Substation personnel were called in to assist and resolve the substation issue. Since field personnel, engineers, and management were unable to determine why the breaker would not close, the decision was made to by-pass the breaker and restore power. All customers were restored on August 10, 2019. Upon further investigation by the Substation personnel, it was determined the breaker failed to close due to a bolt on the trip latch mechanism that had backed out along with a wire on the close coil that was not connected. After repairs were made on the breaker the circuit was restored to normal configuration on August 11, 2019.

The outage affected feed to 1,991 customers for a duration of 5 hours 56 minutes. In total, the outages which occurred during the major event period affected 2,741 customers with outage durations ranging from 28 minutes to 14 hours 35 minutes.

Figure 1 displays customer outages during the event as shown by their duration in reference to the restoration stages. Figure 2 shows the lighting strikes from August 9th at 5:00 p.m. through August 11th at 1:00 a.m.

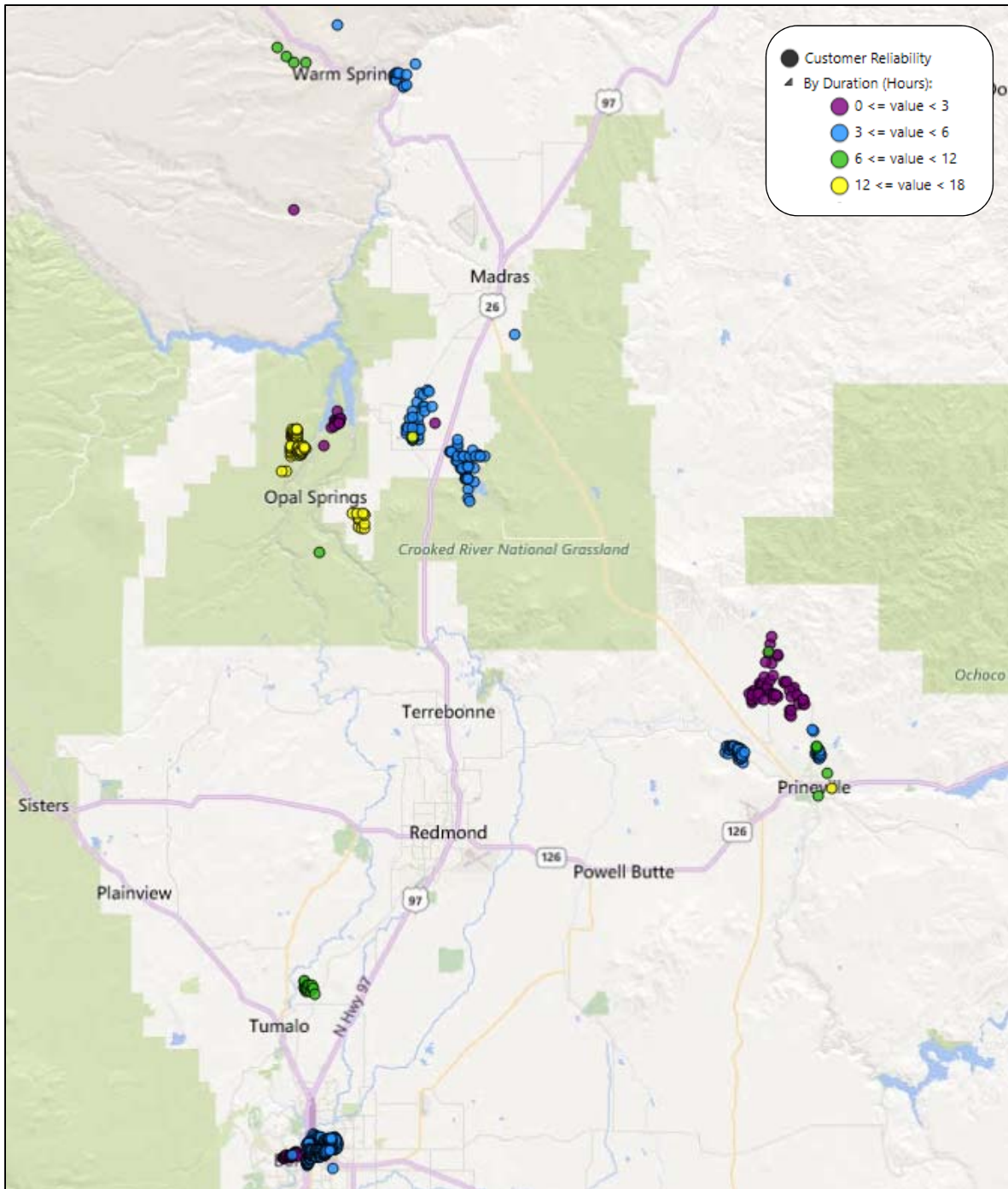


Figure 1: Outages experienced during the major event by duration.

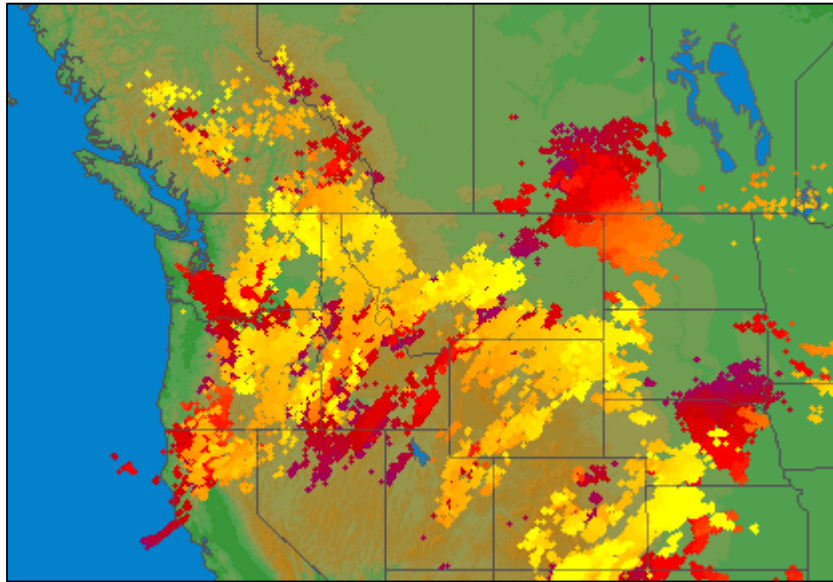


Figure 2 Recorded lightning strikes from August 9th at 5:00 p.m. through August 11th at 1:00 a.m.¹

Restoration Intervals for Customers during Major Event

Total Customers Sustained	< 3 Hrs.	3 - 24 Hrs.	24-48 Hrs.
2,741	291	2,450	0

Restoration Resources ²

Personnel Resources	
Field Journeymen	11
General Foreman	11
Substation Relay Tech	2
Substation Journeymen	3
Vegetation crewmembers	2

Equipment Resources	
# Transformers	3
Cutouts	5

State Estimated Major Event Costs ²

Estimate \$	Labor	Contracts	Materials	Overheads	Total
Capital Expense	\$4,033	\$-	\$2,448	\$648	\$7,129
Total	\$50,287	\$1,902	\$2,556	\$2,425	\$57,169

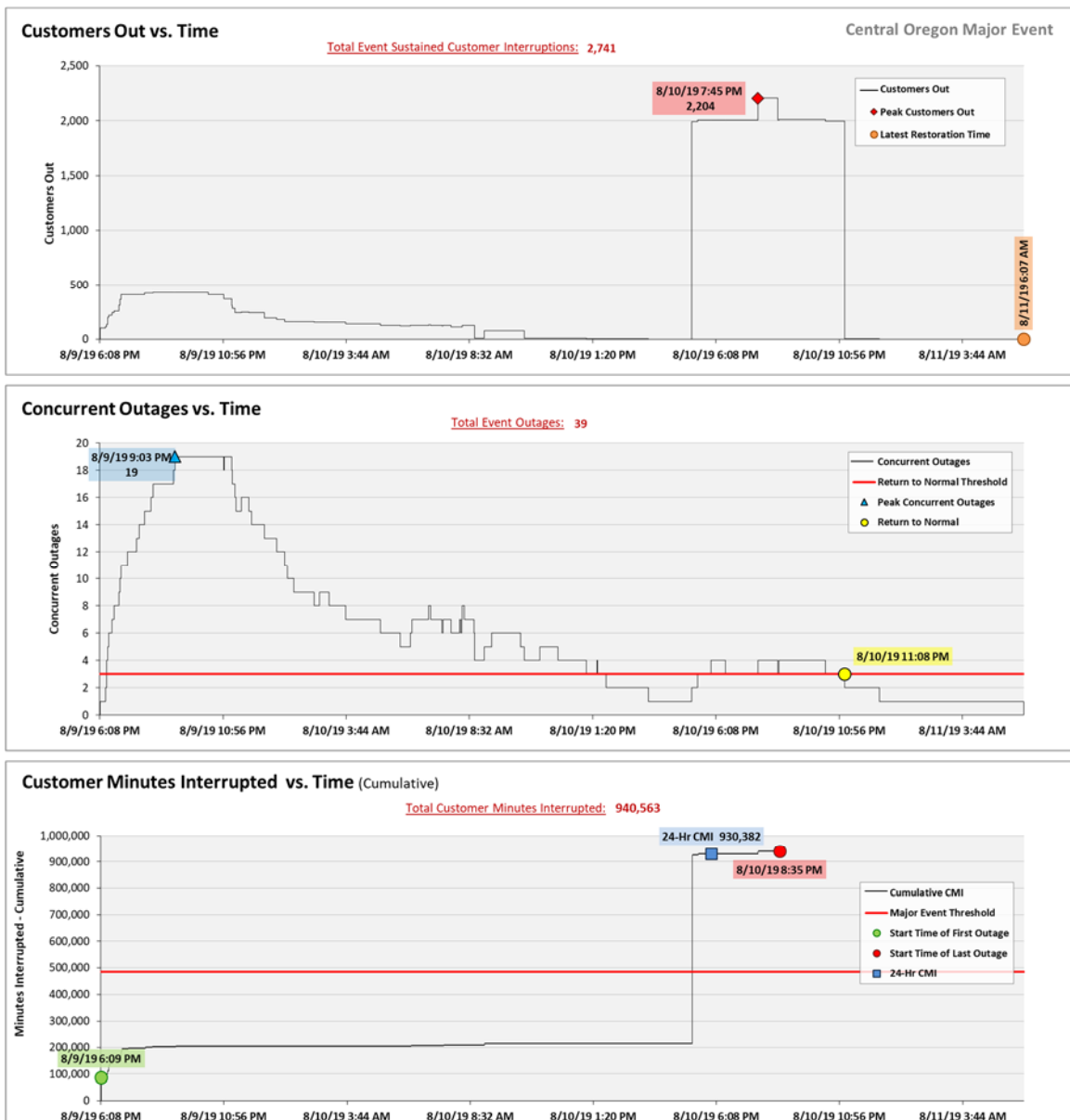
¹ http://www.lightningmaps.org/blitzortung/america/index.php?bo_page=archive&lang=en

² 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.

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 Central 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 2019 Central Oregon reliability threshold is 484,821 customer minutes lost (5.72 Central 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

SSC by State Analysis

Central Oregon		Customer Analysis 8/9/2019 through 8/10/2019					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	2,741	0%	940,563	38	1,976,599	-	291	2,450	-	-	-	-	11%	0.48	0.001	343
PP	Pacific Power	2,741	0%	940,563	38	801,840	-	291	2,450	-	-	-	-	11%	1.17	0.003	343
OR	Oregon	2,741	0%	940,563	38	617,662	-	291	2,450	-	-	-	-	11%	1.52	0.004	343
OR	BEND/REDMOND	2,231	3%	733,939	8	67,495	-	198	2,033	-	-	-	-	9%	10.87	0.033	329
OR	MADRAS	510	3%	206,625	30	17,312	-	93	417	-	-	-	-	18%	11.94	0.029	405

*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 8/9/2019 through 8/10/2019					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
8/9/2019		434	0%	204,638	21	617,662	-	4	430	-	-	-	-	1%	0.33	0.001	472
8/10/2019		2,307	0%	735,925	17	617,662	-	287	2,020	-	-	-	-	12%	1.19	0.004	319

Data as of
9/12/2019

PacifiCorp Major Event Report
SSC by State Analysis

	Central Oregon	Event 08/09/19 through 08/10/19						Month 08/01/19 through 08/31/19						YTD 01/01/19 through 08/31/19					
		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	2.22	0.031	72	0.85	0.004	189	12.47	0.125	100	10.82	0.091	118	198.65	0.941	211	79.89	0.710	113
PP	Pacific Power	4.79	0.071	67	1.41	0.006	241	12.48	0.137	91	8.41	0.055	154	321.86	1.101	292	74.73	0.646	116
OR	Oregon	2.68	0.010	260	1.15	0.006	197	10.58	0.076	139	8.16	0.049	165	373.46	1.097	340	76.38	0.673	114
OR	BEND/REDMOND	1.20	0.004	321	0.01	0.000	100	2.24	0.026	87	0.31	0.002	180	5.07	0.060	84	1.59	0.010	160
OR	MADRAS	0.34	0.001	404	0.00	0.000	140	0.56	0.003	192	0.07	0.000	182	5.28	0.047	112	1.50	0.013	111

*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
9/12/2019