



e-FILING REPORT COVER SHEET

COMPANY NAME: PORTLAND GENERAL ELECTRIC COMPANY

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: 113

Report is required by: OAR 860-023-0151

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:

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

PGE 2019 Annual Reliability 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.



Portland General Electric
121 SW Salmon Street · Portland, Ore. 97204

April 29, 2020

Public Utility Commission of Oregon
Attn: Filing Center
201 High Street SE
P.O. Box 1088
Salem, OR 97308-1088

RE: **PGE 2019 Annual Reliability Report**

Pursuant to OAR 860-023-0151, PGE hereby submits the Company's 2019 Annual Reliability Report.

Attachment A provides Section III, Feeder Performance Summary and Section VIII 2019 Feeder Information will be sent to the Filing Center in a zip file and marked as Confidential Information under OAR 860-001-0070. PGE will send a separate email with a password to open the zip file as reflected in Order No. 20-088.

Should you have any questions regarding this filing, please contact Mary Widman at (503) 464-8223.

Please direct all formal correspondence and requests to the following email address pge.opuc.filings@pgn.com

Sincerely,

\s\ Robert Macfarlane

Robert Macfarlane
Manager, Pricing and Tariffs

Enclosure
cc: Lori Koho, OPUC



Portland General Electric 2019 Annual Reliability Report



**January 1, 2019 through
December 31, 2019**

Section I

Report Summary

The Annual Reliability Report provides distribution system performance information based on service interruptions to PGE customers. The report is utilized to understand the overall reliability of the distribution system and to identify areas of improvement and excellence.

The overall performance of PGE's distribution system is represented by the following indices¹: System Average Interruption Duration Index (SAIDI), System Average Interruption Frequency Index (SAIFI), and Momentary Average Interruption Event Frequency Index² (MAIFI_e).

PGE's distribution system performance calculations are based on the IEEE 1366 methodology. The data utilized for the calculations is captured from PGE's Outage Management System (OMS) and confirmed via a multi-step evaluation process. The results of the calculations are evaluated on a daily basis and confirmed via a standardized review process.

PGE excluded the following dates from the 2019 distribution system performance indices as they met the IEEE 1366 Major Event Day (MED) exclusion criteria: January 5th, June 26th.

Planned outage events³ were excluded from the 2019 distribution system performance indices⁴ based on PGE's understanding of best practices performed by peer utilities and analysis methods utilized in IEEE 1782. While planned outage events were not captured in PGE's 2019 indices, these events are reported in Sections II and V of this report to comply with Oregon Administrative Rule (OAR) 860-023-0151.

¹ Details regarding the performance indices can be found in Reliability Measure Definitions section of the Appendix

² MAIFI_e calculations are limited to feeders with remote monitoring equipment

³ Per IEEE 1366, a planned outage event is defined as "the intentional disabling of a component's capability to deliver power, done at a preselected time, usually for the purposes of construction, preventative maintenance, or repair." IEEE 1782, states "the planned outage event category includes, but is not limited to: road construction, maintenance and repairs, load swaps, replacing equipment, and house moves. Typically, planned interruptions are those interruptions that can be delayed by the utility personnel and performed only after the appropriate or required customer notification."

⁴ PGE began excluding planned outages from distribution system performance indices in 2016. Planned outage events were not excluded in previous years.

4 year Corporate Annual Summary Excluding Major Event Days¹

Year	Reported Outages	SAIFI Average Annual Outages per Customer (occurrences)	SAIDI ² Average Annual Outage Duration per Customer (minutes)	MAIFle ³ Average Annual Momentary Interruptions per Customer (occurrences)
2019	7,663	0.61	98	1.3
2018	6,884	0.52	88	1.3
2017	8,704	0.62	113	1.4
2016	7,496	0.59	97	1.1

4 year Corporate Annual Summary Including Major Event Days

Year	Reported Outages	SAIFI Average Annual Outages per Customer (occurrences)	SAIDI ² Average Annual Outage Duration per Customer (minutes)	MAIFle ³ Average Annual Momentary Interruptions per Customer (occurrences)
2019	8,244	0.71	128	1.3
2018	6,884	0.52	88	1.3
2017	12,897	1.04	350	1.4
2016	9,340	0.79	169	1.1

¹ A Major Event Day (MED) is a day in which the reasonable design and or operational limits of the electric power system were exceeded. MED's are determined via IEEE Standard 1366. See Section IX - Appendix for additional details.

² SAIDI values are rounded to the nearest whole number.

³ MAIFle events for Major Event Days are not excluded.

2019 Corporate Annual Summary Without Major Event Days¹

Region	Reported Outages	SAIFI Average Annual Outages per Customer (occurrences)	SAIDI ² Average Annual Outage Duration per Customer (minutes)	MAIFle Average Annual Momentary Interruptions per Customer (occurrences)
EASTERN	3,499	0.59	86	1.9
SOUTHERN	2,319	0.78	147	0.6
WESTERN	1,845	0.55	87	0.8
PGE:	7,663	0.61	98	1.3

2019 Corporate Annual Summary Including Major Event Days

Region	Reported Outages	SAIFI Average Annual Outages per Customer (occurrences)	SAIDI ² Average Annual Outage Duration per Customer (minutes)	MAIFle ³ Average Annual Momentary Interruptions per Customer (occurrences)
EASTERN	3,796	0.70	118	1.9
SOUTHERN	2,491	0.87	182	0.6
WESTERN	1,957	0.63	110	0.8
PGE:	8,244	0.71	128	1.3

¹ A Major Event Day (MED) is a day in which the reasonable design and or operational limits of the electric power system were exceeded. MED's are determined via IEEE Standard 1366. See Section IX - Appendix for additional details.

² SAIDI values are rounded to the nearest whole number.

³ MAIFle events for Major Event Days are not excluded.

Section II

Outage Analysis

This section provides graphical representation of 2019 outage causes by both customer hours and event count. The intent of this section is to provide high-level analysis of the outages that result in the highest number of customer hours and the type of events with the highest frequency. Pie charts are utilized to reflect data from the most recent year and bar charts are utilized to capture the 4-year trend.

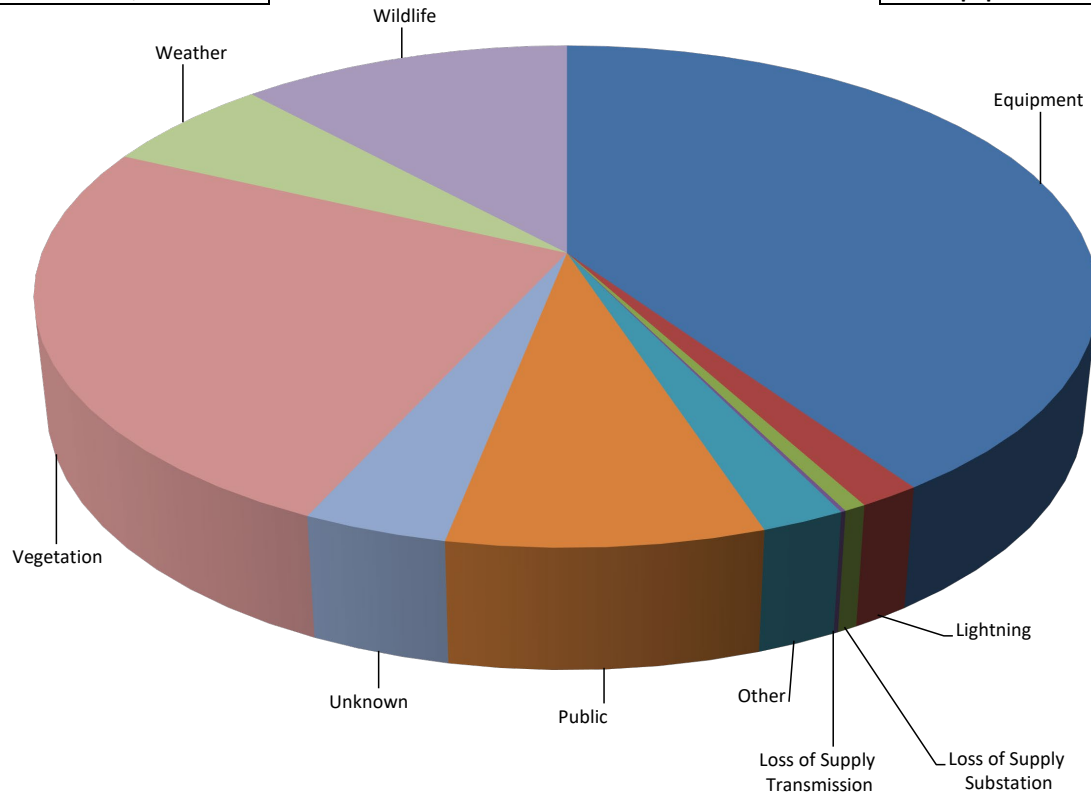
- Outage Causes by Events – Pie Chart
- Outage Causes by Events – 4 Year Comparison Bar Chart
- Outage Causes by Customer Hours – Pie Chart
- Outage Causes by Customer Hours – 4 Year Comparison Bar Chart

2019 Outages by Cause - Count

Equipment	3,098	40.4%
Lightning	123	1.6%
Loss of Supply - Substation	44	0.6%
Loss of Supply - Transmission	10	0.1%
Other	167	2.2%
Public	626	8.2%
Unknown	287	3.7%
Vegetation	1,928	25.2%
Weather	472	6.2%
Wildlife	908	11.8%
Total:	7,663	100.0%

Vegetation:		
Limb on Line	996	51.7%
Tree / Limb Burning	229	11.9%
Tree Uprooted	703	36.5%
Total Vegetation:	1,928	100.0%

Equipment:		
Cutout, Fuse, Arrestor	617	19.9%
Meter	31	1.0%
OH Conductor	297	9.6%
OH Hardware	754	24.3%
Pole / Structure	21	0.7%
Primary Device	13	0.4%
Transformer	362	11.7%
UG Accessory	175	5.6%
UG Conductor	828	26.7%
Total Equipment:	3,098	100.0%

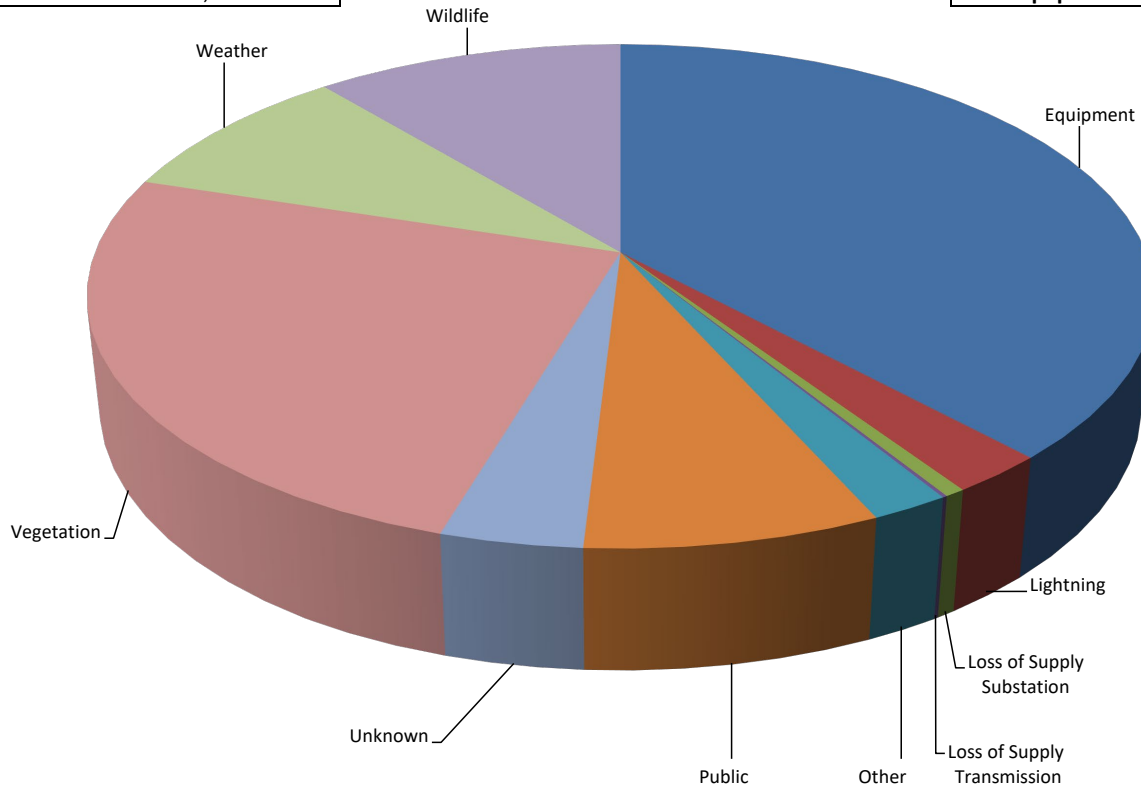


2019 Outages by Cause Including Major Event Days - Count

Equipment	3,140	38.1%
Lightning	207	2.5%
Loss of Supply - Substation	44	0.5%
Loss of Supply - Transmission	10	0.1%
Other	168	2.0%
Public	630	7.6%
Unknown	303	3.7%
Vegetation	2,086	25.3%
Weather	745	9.0%
Wildlife	911	11.1%
Total:	8,244	100.0%

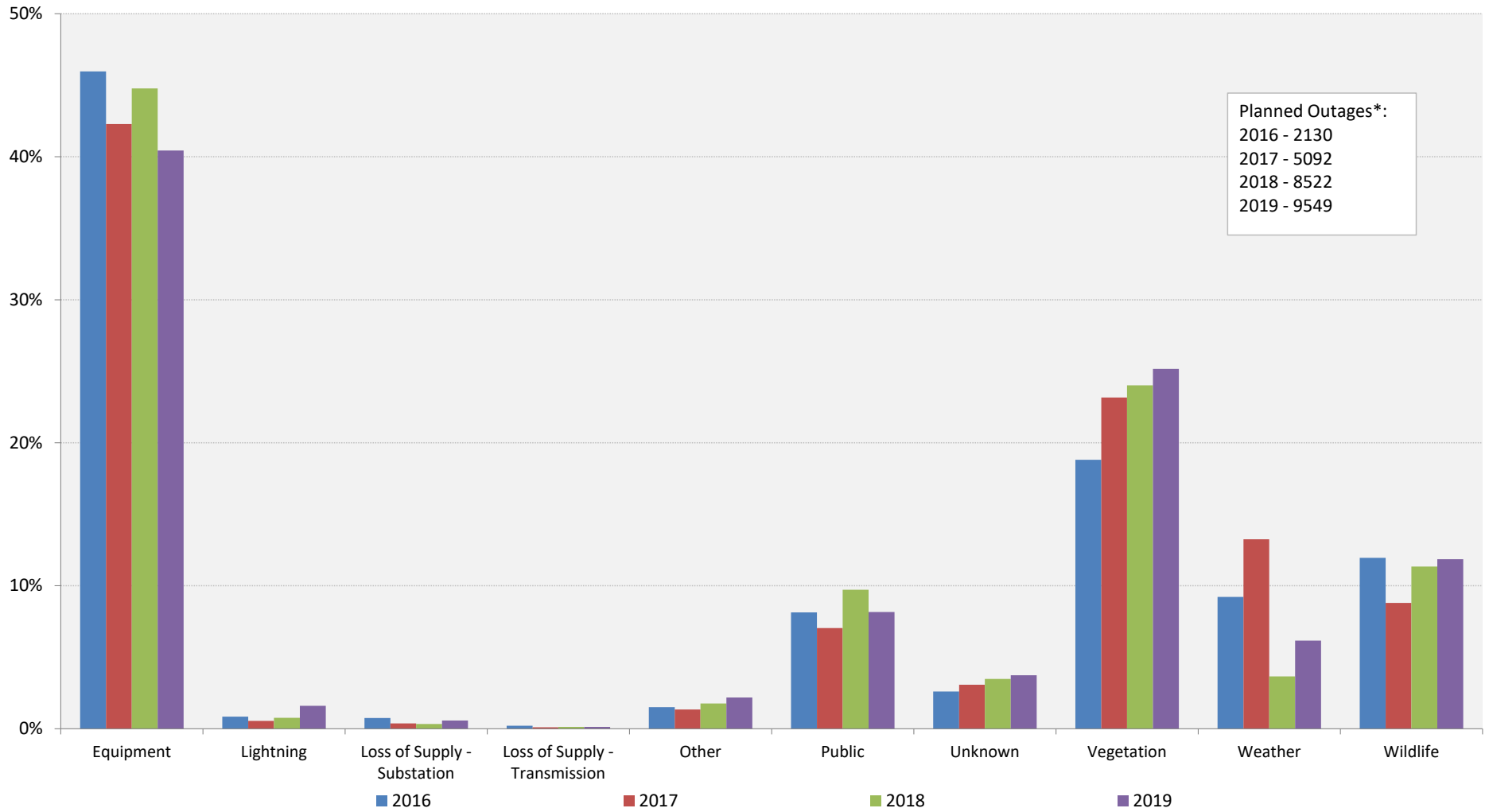
Vegetation:		
Limb on Line	1,068	51.2%
Tree / Limb Burning	255	12.2%
Tree Uprooted	763	36.6%
Total Vegetation:	2,086	100.0%

Equipment:		
Cutout, Fuse, Arrestor	626	19.9%
Meter	31	1.0%
OH Conductor	308	9.8%
OH Hardware	760	24.2%
Pole / Structure	23	0.7%
Primary Device	14	0.4%
Transformer	367	11.7%
UG Accessory	176	5.6%
UG Conductor	835	26.6%
Total Equipment:	3,140	100.0%



Outage Causes by Count

4 Year Comparison (2016-2019)



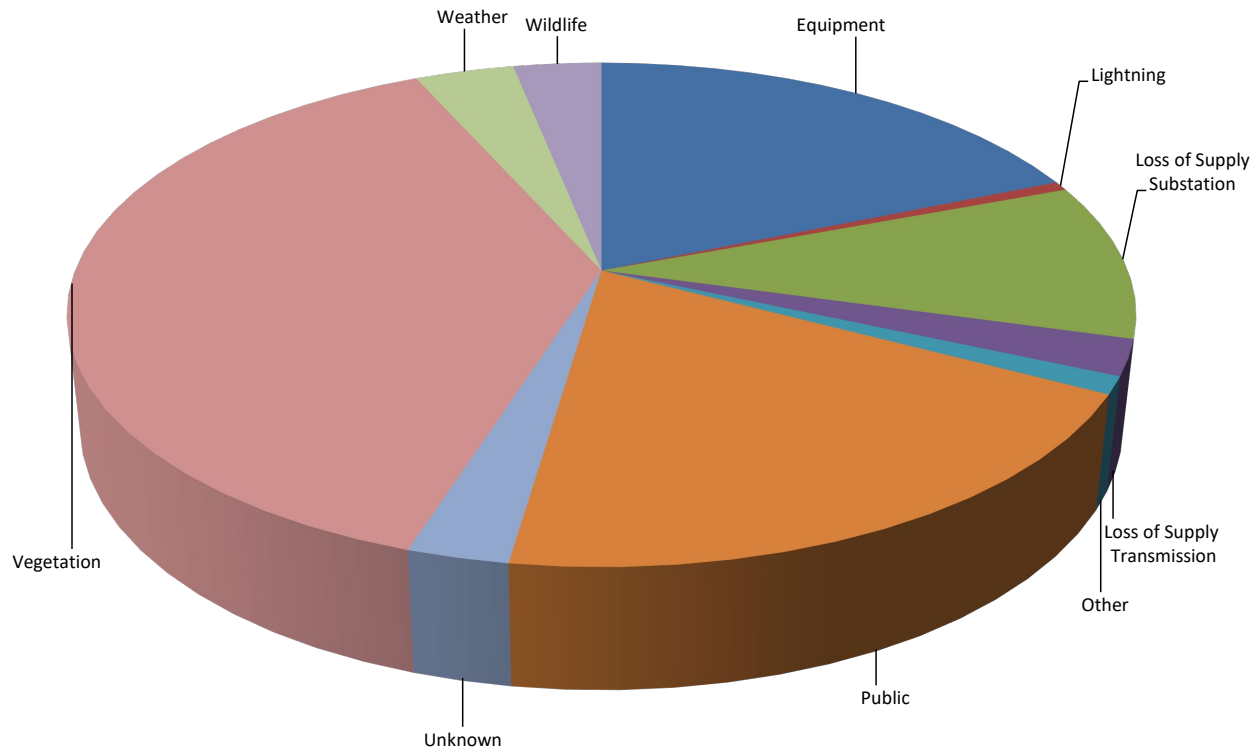
* Note: While PGE has improved the awareness and accuracy of planned outages, the Company continues to enhance processes and procedures for these events with the goal of improving the data quality.

2019 Outages by Cause - Customer Hours

Equipment	271,165	18.7%
Lightning	8,379	0.6%
Loss of Supply - Substation	145,199	10.0%
Loss of Supply - Transmission	33,245	2.3%
Other	16,164	1.1%
Public	284,248	19.6%
Unknown	37,991	2.6%
Vegetation	555,814	38.3%
Weather	51,354	3.5%
Wildlife	45,768	3.2%
Total:	1,449,326	100.0%

Vegetation:		
Limb on Line	239,891	43.2%
Tree / Limb Burning	62,983	11.3%
Tree Uprooted	252,939	45.5%
Total Vegetation:	555,814	100.0%

Equipment:		
Cutout, Fuse, Arrestor	29,862	11.0%
Meter	329	0.1%
OH Conductor	32,691	12.1%
OH Hardware	48,900	18.0%
Pole / Structure	2,106	0.8%
Primary Device	10,556	3.9%
Transformer	20,001	7.4%
UG Accessory	15,169	5.6%
UG Conductor	111,550	41.1%
Total Equipment:	271,165	100.0%

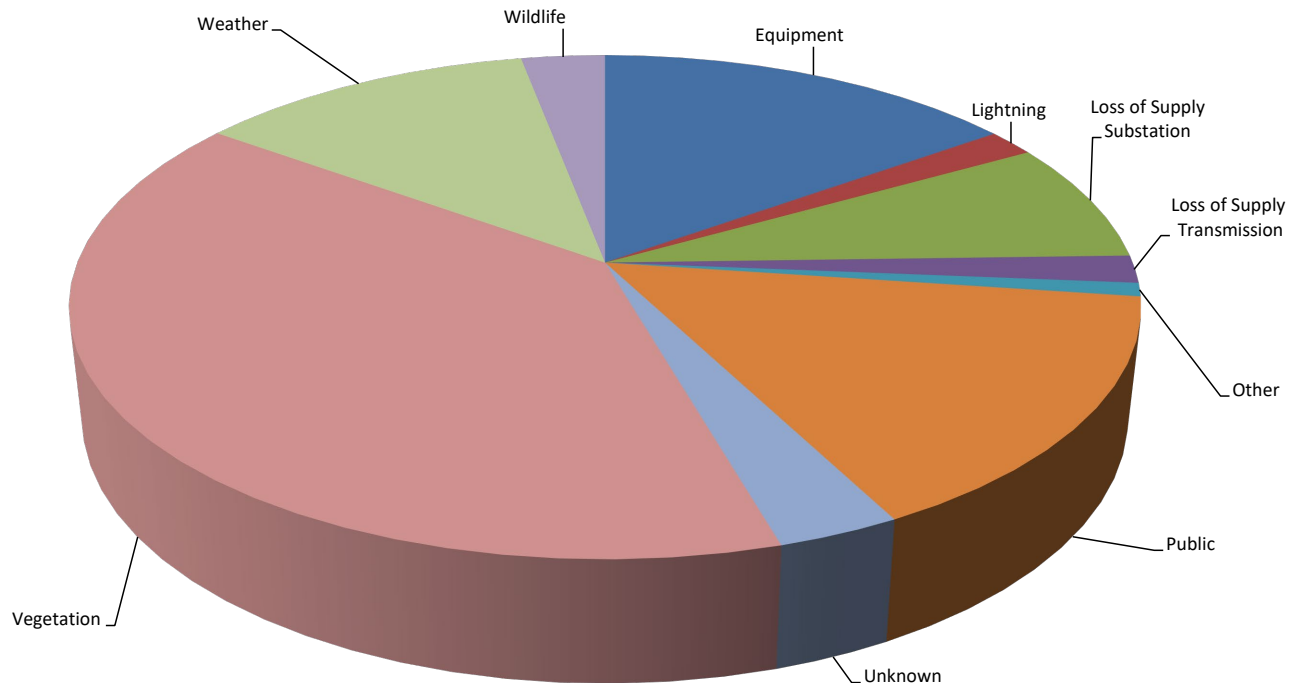


2019 Outages by Cause Including Major Event Days - Customer Hours

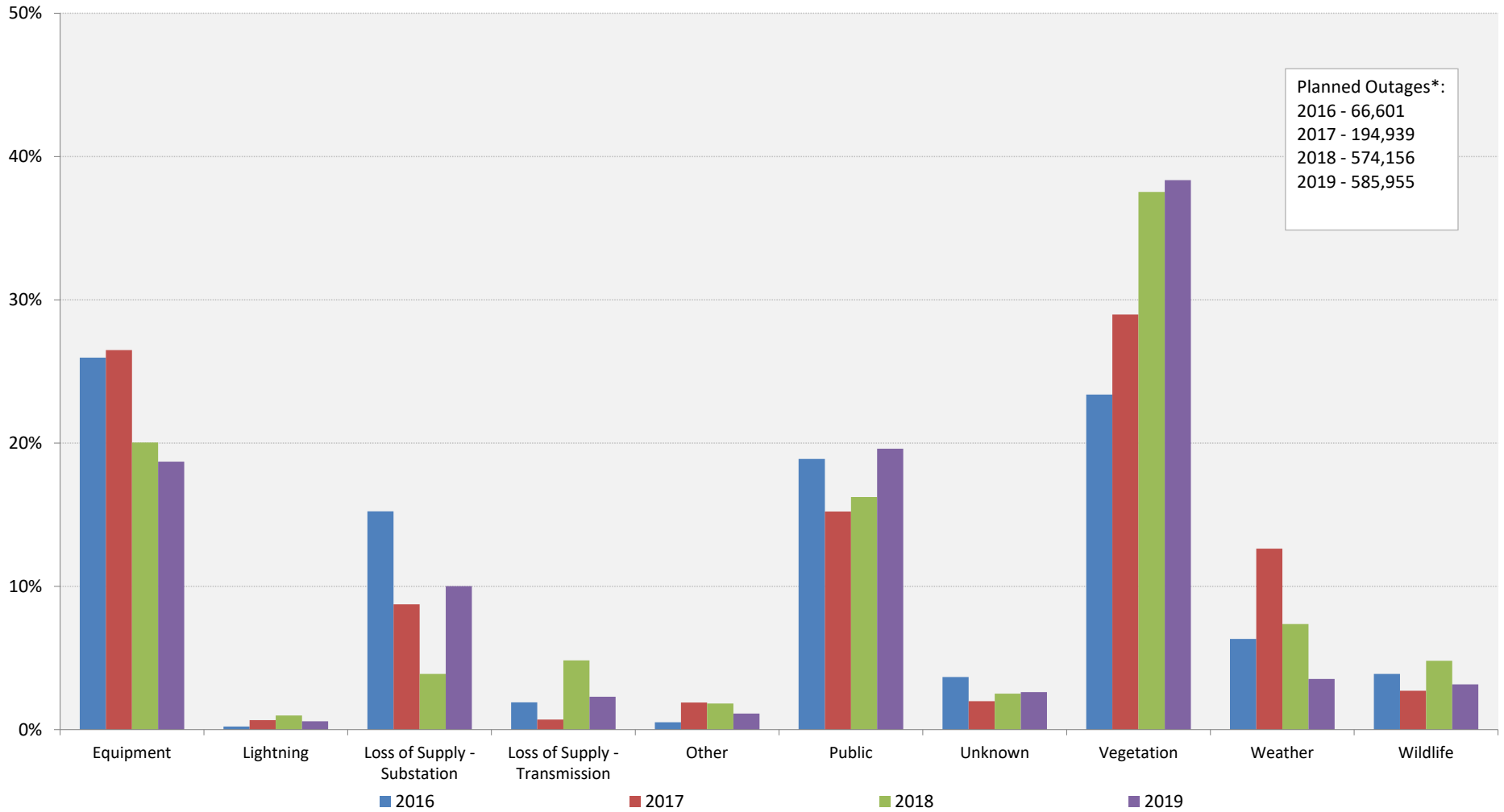
Equipment	284,990	15.1%
Lightning	32,503	1.7%
Loss of Supply - Substation	145,199	7.7%
Loss of Supply - Transmission	33,245	1.8%
Other	16,167	0.9%
Public	286,353	15.2%
Unknown	59,941	3.2%
Vegetation	743,055	39.4%
Weather	227,460	12.1%
Wildlife	56,498	3.0%
Total:	1,885,410	100.0%

Vegetation:		
Limb on Line	332,293	44.7%
Tree / Limb Burning	115,781	15.6%
Tree Uprooted	294,981	39.7%
Total Vegetation:	743,055	100.0%

Equipment:		
Cutout, Fuse, Arrestor	36,810	12.9%
Meter	329	0.1%
OH Conductor	37,748	13.2%
OH Hardware	49,009	17.2%
Pole / Structure	2,130	0.7%
Primary Device	10,595	3.7%
Transformer	21,440	7.5%
UG Accessory	15,186	5.3%
UG Conductor	111,743	39.2%
Total Equipment:	284,990	100.0%



Outage Causes by Customer Hours 4 Year Comparison (2016-2019)



* Note: While PGE has improved the awareness and accuracy of planned outages, the Company continues to enhance processes and procedures for these events with the goal of improving the data quality.

Section III

Feeder Performance Summary

This section provides a summary of reliability indices by Region and Feeder. The list is sorted in alphabetical order by Region and Feeder Name. Each feeder is classified as one of the following:

- Urban
- Rural
- Remote

Definition of Feeder Classifications

- A feeder is designated Urban if 50% or more of the load is inside the Urban Growth Boundary (UGB)
- A feeder is designated Rural if one or more of the following apply:
 - The load on a feeder is greater than 0.5 MVA per square mile.
 - A feeder has more than 100 customers per mile.
 - A feeder is serving load inside an incorporated city.
 - A feeder is directly adjacent to the UGB with feeder ties into
- A feeder is Remote if all conditions above do not apply.

The table below displays the individual feeder performance thresholds based on classification

Feeder Classification	SAIDI	SAIFI	MAIFI _e
Urban	2 hours (120 Minutes)	2.0 Occurrences	5 Occurrences
Rural	5 hours (300 Minutes)	2.6 Occurrences	10 Occurrences
Remote	7 hours (420 Minutes)	2.6 Occurrences	15 Occurrences

NOTE: Idle feeders are not included in this list. Feeders may be omitted if they are a part of an alternate/multiple feeder service.

Attachment A
PGE 2019 Annual Reliability Report

Confidential - provided in a password protected zip file
Section III, Feeder Performance Summary
Section VIII, 2019 Feeder Information

Section IV

Outages by Cause Natural

This section provides the number of customer outages (frequency) and customer outage hours (duration) caused by natural events. The information is presented by feeder and attributed to one of the following cause categories¹:

- Adverse Weather
- Lightning
- Animals
- Tree Contacts (Non-Preventable and Preventable)²
- Unknown

NOTES:

- Idle feeders are not included in this list
- Feeders may be omitted if they are a part of an alternate/multiple feeder service

¹ See Section IX – Cause Code Categories and Mapping for detailed causes for each category

² See section VII for detailed information

2019 Outages by Cause Natural

	Feeder Name	Total Natural		Adverse Environment		Lightning		Animal		Non-Preventable Tree Contacts*		Preventable Tree Contacts*		Unknown	
		Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
1	ABERNETHY-CLACKAMAS HEIGHTS	2	526					1	1	1	525				
2	ABERNETHY-OREGON CITY	12	2,804	1	3			3	35	8	2,766				
3	ABERNETHY-TRANSIT	4	1,320	1	0					3	1,320				
4	ABERNETHY-WASHINGTON	8	369					5	96	3	273				
5	ALDER-ANKENY	3	36							3	36				
6	ALDER-IRVING	4	71					3	70	1	1				
7	ALDER-LINCOLN	2	14	1	6							1	8		
8	ALDER-STARK														
9	ALDER-TAYLOR	2	21							1	3	1	18		
10	ALDER-YAMHILL	2	1,615					1	23	1	1,592				
11	AMITY-AMITY 13	18	1,126	1	2			5	55	10	238	2	830		
12	AMITY-BELLEVUE	17	5,647	1	4,468	2	7	1	8	10	1,136	1	4	2	25
13	ARLETA-52ND	4	202					3	159	1	43				
14	ARLETA-FOSTER	1	9					1	9						
15	ARLETA-HAROLD	8	218	1	14			6	201	1	4				
16	ARLETA-POWELL	7	344					6	339	1	5				
17	ARLETA-STEELE	5	56					3	35	1	20	1	0		
18	BANKS-BANKS 13	13	303					4	21	7	230			2	52
19	BANKS-CEDAR CANYON	41	8,260	3	1,245			1	5	32	6,796	2	167	3	47
20	BARNES-BATTLE CREEK	9	1,513			1	5	3	31	2	8	1	1,394	2	75
21	BARNES-BOONE	12	2,193					6	858	4	325			2	1,010
22	BARNES-COMMERCIAL	11	4,065	2	2,377			4	49	4	1,594	1	46		
23	BARNES-SUNNYSIDE	9	822	1	2	4	627			2	176	1	2	1	15
24	BEAVER-KB PIPELINE														
25	BEAVERTON-ALLEN	10	234	2	16			5	208	1	1	1	2	1	6
26	BEAVERTON-JAMIESON	1	19											1	19
27	BEAVERTON-NORTHWEST	2	50					2	50						
28	BEAVERTON-WEST SLOPE	2	9					1	7					1	2
29	BELL-BATTIN	10	342					4	102	5	166	1	74		
30	BELL-BRENTWOOD	1	14					1	14						

*For detailed Tree Contacts, see Outages by Tree Contacts report

Outs = Outages
Hrs = # of customers * duration hrs

2019 Outages by Cause Natural

	Feeder Name	Total Natural		Adverse Environment		Lightning		Animal		Non-Preventable Tree Contacts*		Preventable Tree Contacts*		Unknown	
		Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
31	BELL-FLAVEL	3	154					3	154						
32	BELL-JOHNSON CREEK														
33	BELL-KENDALL	5	500	1	12			1	11	2	3	1	474		
34	BELL-KING	5	2,086	1	105			1	2	3	1,979				
35	BELL-SOUTHGATE	6	927			1	83	2	217	2	501	1	126		
36	BELL-WICHITA	11	288			1	61	4	122	4	99	1	4	1	3
37	BETHANY-BURTON														
38	BETHANY-GERMANTOWN	15	2,371	3	1,977	1	4	1	13	10	377				
39	BETHANY-KAISER	1	6,120							1	6,120				
40	BETHANY-LAIDLAW	1	1,045									1	1,045		
41	BETHANY-SPRINGVILLE	2	192	1	7					1	185				
42	BETHANY-THOMPSON	2	34					2	34						
43	BETHEL-FRUITLAND	12	6,754	1	3	1	8	7	80	3	6,663				
44	BETHEL-GEER	4	2,226					2	26	2	2,200				
45	BETHEL-MACLEAY	7	269			1	1	2	29	4	238				
46	BLUE LAKE-BLUE LAKE 13	2	2,214							2	2,214				
47	BLUE LAKE-SUNDIAL	3	275	1	11			1	161	1	103				
48	BLUE LAKE-TOYO TANSO														
49	BOISE CASCADE-BOISE #1														
50	BOONES FERRY-GOODALL	8	3,363	1	8			1	64	5	2,637	1	655		
51	BOONES FERRY-KRUSE	6	481	1	22			5	459						
52	BOONES FERRY-LAKE GROVE	7	638	5	580					2	57				
53	BOONES FERRY-MOUNTAIN PARK	1	2							1	2				
54	BOONES FERRY-WEMBLEY PARK	10	1,804					1	7	7	1,473	1	281	1	45
55	BORING-282ND	27	3,044	2	9	1	121	11	130	11	2,779			2	6
56	BORING-CITY	13	1,057	4	361					5	470	2	38	2	188
57	BORING-TELFORD	17	2,850	2	12					11	1,182			4	1,656
58	BRIGHTWOOD-BRIGHTWOOD 13	45	8,954	4	396			1	3	34	5,901	3	148	3	2,508
59	BRIGHTWOOD-NORTH BANK	13	449	2	40			1	6	9	365			1	38
60	BROOKWOOD-BORWICK	1	2,929							1	2,929				

*For detailed Tree Contacts, see Outages by Tree Contacts report

Outs = Outages
Hrs = # of customers * duration hrs

2019 Outages by Cause Natural

Feeder Name	Total Natural		Adverse Environment		Lightning		Animal		Non-Preventable Tree Contacts*		Preventable Tree Contacts*		Unknown	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
61 BROOKWOOD-BROOKWOOD 13														
62 BROOKWOOD-SUNRISE	2	4,092							2	4,092				
63 CANBY-13644	13	1,080	2	21	1	2	1	39	6	994			3	24
64 CANBY-BUTTEVILLE	6	41	3	8			1	24					2	9
65 CANBY-FILBERT	1	4					1	4						
66 CANBY-ZIMMERMAN	29	4,228	2	12			2	4	16	3,983	3	204	6	25
67 CANYON-13114 NETWORK #1														
68 CANYON-13115 NETWORK #1														
69 CANYON-13116 NETWORK #1														
70 CANYON-13117 NETWORK #1														
71 CANYON-13118 PSU														
72 CANYON-13120														
73 CANYON-13121														
74 CANYON-13122 NETWORK #2														
75 CANYON-13123 NETWORK #2														
76 CANYON-13124 NETWORK #2														
77 CANYON-13125 NETWORK #2														
78 CANYON-13133 NETWORK #3														
79 CANYON-13134 NETWORK #3														
80 CANYON-13135 NETWORK #3														
81 CANYON-13136 NETWORK #3														
82 CANYON-21ST	2	81					1	1					1	80
83 CANYON-23RD	13	1,181					7	103	4	978	1	0	1	99
84 CANYON-BURNSIDE	2	337	1	0			1	337						
85 CANYON-CANYON 13	11	870	3	348			1	34	7	488				
86 CARVER-ALMOND														
87 CARVER-CARVER 13	7	592	4	488			1	79	1	6			1	19
88 CARVER-NORTH														
89 CARVER-RIVERBEND														
90 CARVER-SOUTH														

*For detailed Tree Contacts, see Outages by Tree Contacts report

Outs = Outages
Hrs = # of customers * duration hrs

2019 Outages by Cause Natural

	Feeder Name	Total Natural		Adverse Environment		Lightning		Animal		Non-Preventable Tree Contacts*		Preventable Tree Contacts*		Unknown	
		Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
91	CARVER-WOODS	21	2,101	1	0			1	1	17	1,675	1	62	1	363
92	CEDAR HILLS-CEDAR HILLS 13														
93	CEDAR HILLS-LEAHY	12	6,170	1	9			4	353	7	5,809				
94	CEDAR HILLS-SHOPPING CENTER	10	1,471					2	39	7	1,263			1	170
95	CEDAR HILLS-SKYLINE														
96	CEDAR HILLS-ST VINCENT														
97	CEDAR HILLS-SYLVAN	14	4,000					3	122	10	3,871			1	8
98	CENTENNIAL-BARKER	8	269	1	0			4	108	1	151	1	2	1	8
99	CENTENNIAL-BRAECROFT	3	270	1	92					1	164	1	14		
100	CENTENNIAL-CENTENNIAL 13	7	708	1	11			2	102	1	3	2	575	1	17
101	CENTENNIAL-TREELAND	6	2,211					3	51	2	2,157	1	2		
102	CLACKAMAS-EVELYN														
103	CLACKAMAS-GLADSTONE	13	832	3	16			2	7	6	790			2	19
104	CLACKAMAS-JENNIFER	7	311			1	4	6	307						
105	CLACKAMAS-TOLBERT	5	414					2	95			3	319		
106	CLAXTAR-CLAXTAR 13	4	458							1	292	2	155	1	11
107	CLAXTAR-HAYESVILLE	6	4,051					5	312	1	3,739				
108	CLAXTAR-RIDGE	4	73					4	73						
109	COFFEE CREEK-FREEMAN	2	1,682	1	5					1	1,677				
110	COFFEE CREEK-HOLIDAY	1	3					1	3						
111	COLTON-DHOOGHE	14	2,411	2	82					8	2,124	2	175	2	29
112	COLTON-GRAYS HILL	46	4,224	22	439	2	16	2	9	16	3,453	2	303	2	4
113	CORNELIUS-ADAIR	7	377			2	117	1	211	4	49				
114	CORNELIUS-CORNELIUS 13	12	1,127	3	306			4	214	3	160	1	402	1	46
115	CORNELIUS-VERBOORT	7	508			1	6	3	438	3	64				
116	CORNELL-BLUFFS	2	121	1	118			1	3						
117	CORNELL-SALTZMAN	2	350					1	223			1	126		
118	CORNELL-WESTLAWN	10	1,236	1	9			5	491	3	728			1	8
119	CULVER-GAFFIN														
120	CULVER-SANYO #1														

*For detailed Tree Contacts, see Outages by Tree Contacts report

Outs = Outages
Hrs = # of customers * duration hrs

2019 Outages by Cause Natural

Feeder Name	Total Natural		Adverse Environment		Lightning		Animal		Non-Preventable Tree Contacts*		Preventable Tree Contacts*		Unknown	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
121 CURTIS-11077														
122 CURTIS-CURTIS 13	5	735					4	727	1	8				
123 DAYTON-EAST	24	2,011					12	555	8	1,077	1	356	3	23
124 DAYTON-LAFAYETTE	13	2,948	2	82			5	408	5	2,456			1	2
125 DAYTON-SOUTHWEST	6	324	1	2			1	3	4	318				
126 DELAWARE-DENVER	10	5,333	1	7					5	5,074	4	252		
127 DELAWARE-INTERSTATE	4	976					1	74	3	902				
128 DELAWARE-LOMBARD	10	225	2	11	1	24	3	154	2	4	2	32		
129 DENNY-EAST	5	195					1	58	4	137				
130 DENNY-NORTH														
131 DENNY-SOUTH	3	168					3	168						
132 DENNY-WEST	9	789					6	182	1	4			2	603
133 DILLEY-DILLEY 13	10	1,387	3	4					6	518			1	866
134 DILLEY-SPRINGHILL														
135 DUNNS CORNER-DUNNS CORNER 13	40	4,066	13	1,842			1	12	22	2,178	2	7	2	27
136 DUNNS CORNER-KELSO	1	37							1	37				
137 DURHAM-BONITA														
138 DURHAM-BRIDGEPORT	2	9					2	9						
139 DURHAM-DURHAM 13	1	1					1	1						
140 DURHAM-POOPLANT														
141 DURHAM-SATTLER	9	13,071	1	8					7	13,063			1	0
142 DURHAM-SOUTH	1	1					1	1						
143 E-11021														
144 E-11039														
145 E-11040	1	1					1	1						
146 E-11041	3	15	1	8	1	6	1	2						
147 E-11042														
148 E-11043														
149 E-11047	1	11	1	11										
150 E-11064														

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Hrs = # of customers * duration hrs

2019 Outages by Cause Natural

	Feeder Name	Total Natural		Adverse Environment		Lightning		Animal		Non-Preventable Tree Contacts*		Preventable Tree Contacts*		Unknown	
		Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
151	E-13139	3	611							3	611				
152	E-13140	1	103					1	103						
153	E-13141														
154	E-13142														
155	E-13144	4	686							4	686				
156	E-13145														
157	E-13148														
158	E-13149														
159	E-13150														
160	EAGLE CREEK-BARTON	21	5,825	5	2,161			1	10	13	3,615	1	33	1	6
161	EAGLE CREEK-RIVER MILL	14	650	3	31			1	2	7	197	2	403	1	17
162	EASTPORT-76TH	4	180					1	14	2	157			1	9
163	EASTPORT-PLAZA	2	48											2	48
164	ELMA-ELMA 13	2	18	1	3			1	15						
165	ELMA-FOUR CORNERS	3	429					2	20					1	409
166	ELMA-HUDSON	2	175					2	175						
167	ELMA-STATE	1	2							1	2				
168	ESTACADA-ESTACADA 13	27	5,012	10	421	1	3	2	49	13	4,508	1	31		
169	ESTACADA-FARADAY	31	6,240	4	364			3	32	19	4,591	1	1,240	4	12
170	ESTACADA-NORTH FORK	57	8,090	9	347			3	82	40	6,281	2	1,311	3	68
171	FAIRMOUNT-CANDALARIA	18	2,038					11	1,591	3	264			4	184
172	FAIRMOUNT-MISSION	18	3,001					5	65	11	2,930	2	6		
173	FAIRVIEW-CLEAR CREEK														
174	FAIRVIEW-FAIRVIEW 13	2	647	1	7					1	641				
175	FAIRVIEW-KENNEL CLUB	2	9	1	2			1	8						
176	FAIRVIEW-TROUTDALE	3	8							3	8				
177	FAIRVIEW-WOOD VILLAGE	5	306	1	250			3	14	1	42				
178	FARGO-FARGO 13	27	2,710	4	132			2	7	9	1,558	4	599	8	414
179	GALES CREEK-GALES CREEK 13	34	6,788	3	157			3	7	27	6,619	1	4		
180	GARDEN HOME-MCKAY	8	6,731	3	255					4	6,369	1	107		

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Hrs = # of customers * duration hrs

2019 Outages by Cause Natural

	Feeder Name	Total Natural		Adverse Environment		Lightning		Animal		Non-Preventable Tree Contacts*		Preventable Tree Contacts*		Unknown	
		Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
181	GARDEN HOME-METZGER	11	10,224	2	18			2	27	6	10,043	1	136		
182	GLENCOE-GLISAN	4	13,012			1	5			2	6,404	1	6,602		
183	GLENCOE-PROVIDENCE	3	55							1	5			2	50
184	GLENCOE-SUNNYSIDE	5	161					3	45	2	117				
185	GLENCULLEN-BRIDLEMILE	13	3,495					3	282	10	3,213				
186	GLENCULLEN-SUNSET	5	278							4	168			1	110
187	GLENDOVEER-13596	7	149	1	4	1	29	1	32	2	79	1	1	1	4
188	GLENDOVEER-13597	10	435	1	7	2	204	5	90	2	134				
189	GLENDOVEER-13598	2	19							1	1			1	18
190	GLENDOVEER-13599	2	2,557							1	43			1	2,514
191	GLENDOVEER-CLIFFGATE	6	251			2	180	1	10	1	2			2	59
192	GLENDOVEER-NORTHEAST	3	51					2	46	1	6				
193	GLISAN-FAB 2A														
194	GLISAN-UTILITY 1B														
195	GORMLEY-MCMINNVILLE WL														
196	GRAND RONDE-AGENCY	6	2,166	3	146					3	2,020				
197	GRAND RONDE-FORTHILL	8	6,508	1	4,560					7	1,948				
198	HARBORTON-BURLINGTON	59	6,759	4	840			5	14	37	5,291	2	321	11	292
199	HARBORTON-LINNTON	7	805							6	88	1	717		
200	HARMONY-HARMONY 13	5	169					5	169						
201	HARMONY-INTERNATIONAL	3	314					1	28	1	15	1	271		
202	HARMONY-LAKE	1	15					1	15						
203	HARMONY-LINWOOD	2	88					2	88						
204	HARMONY-MILWAUKIE	11	1,343	2	17	2	72			6	1,231	1	23		
205	HARMONY-THIESSEN														
206	HARRISON-DAVIS	4	249					1	3	2	243	1	2		
207	HARRISON-HARRISON 13	4	78	1	75					3	3				
208	HARRISON-IVON	4	180					1	19	1	60			2	101
209	HAYDEN ISLAND-MAINLAND	3	508	1	180					2	328				
210	HAYDEN ISLAND-NORTH SHORE	5	19,112							3	16,212	1	2	1	2,898

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Hrs = # of customers * duration hrs

2019 Outages by Cause Natural

	Feeder Name	Total Natural		Adverse Environment		Lightning		Animal		Non-Preventable Tree Contacts*		Preventable Tree Contacts*		Unknown	
		Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
211	HAYDEN ISLAND-SOUTH SHORE	10	3,607					1	39	8	1,839			1	1,729
212	HEMLOCK-FREMONT	1	3											1	3
213	HEMLOCK-HEMLOCK 13														
214	HEMLOCK-MASON	1	4	1	4										
215	HILLCREST-CASCADIA														
216	HILLCREST-HILLCREST 13	12	341			4	109	8	232						
217	HILLCREST-SOUTH														
218	HILLSBORO-DAIRY CREEK	14	8,414	2	1,046	3	129	3	357	6	6,882				
219	HILLSBORO-DENNIS	3	136			2	68							1	68
220	HILLSBORO-JACKSON	11	118					8	108	2	10			1	0
221	HILLSBORO-LAUREL	12	316	1	5			2	7	8	235			1	70
222	HILLSBORO-SCHOLLS	5	620					4	479					1	142
223	HOGAN NORTH-BRIGADOON														
224	HOGAN NORTH-HOGAN NORTH 13	11	273	2	10					8	90	1	173		
225	HOGAN NORTH-LINKS	8	2,404	1	23					7	2,381				
226	HOGAN NORTH-SALQUIST	11	679	1	274	2	179			7	139			1	87
227	HOGAN SOUTH-CLEVELAND	5	617	1	19			2	365	1	232			1	2
228	HOGAN SOUTH-LAWRENCE	4	4,823							3	4,821			1	2
229	HOGAN SOUTH-MAIN	2	138					1	137	1	1				
230	HOGAN SOUTH-PAROPA	5	135					5	135						
231	HOGAN SOUTH-WALLULA	4	118	2	23			1	52					1	43
232	HOLGATE-BYBEE	3	5							3	5				
233	HOLGATE-GIDEON	1	2							1	2				
234	HOLGATE-HOLGATE 13	9	321					4	69	2	171	2	61	1	20
235	HOLGATE-KENILWORTH	6	118					3	51	2	13			1	55
236	HOLGATE-RHONE														
237	HUBER-BANY	1	12					1	12						
238	HUBER-FARMINGTON	3	1,484							2	1,299			1	185
239	HUBER-HUBER 13	5	892					3	273	1	591	1	29		
240	HUBER-KINNAMAN	2	6,799							2	6,799				

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2019 Outages by Cause Natural

	Feeder Name	Total Natural		Adverse Environment		Lightning		Animal		Non-Preventable Tree Contacts*		Preventable Tree Contacts*		Unknown	
		Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
241	HUBER-MARYVILLE	3	278					3	278						
242	INDIAN-KEIZER	10	267					7	111	3	156				
243	INDIAN-LABISH	7	396					2	84	2	4	1	305	2	2
244	INDIAN-NORTH	7	2,253	1	226			2	7	3	1,978			1	42
245	INDIAN-STATION														
246	INDIAN-WEST	2	303					1	92	1	211				
247	ISLAND-13180	4	121	1	6					1	14			2	101
248	ISLAND-13187	14	3,232	5	83			2	173	7	2,976				
249	ISLAND-13188	16	2,328	2	23	6	1,888	5	176	1	2	1	8	1	232
250	ISLAND-ISLAND 13	2	19	1	17			1	2						
251	JENNINGS LODGE-ADDIE	4	631					3	609	1	22				
252	JENNINGS LODGE-JENNINGS 13	13	93	8	39			1	12	2	4	1	25	1	12
253	JENNINGS LODGE-MELDRUM	2	26					2	26						
254	JENNINGS LODGE-OAK GROVE	20	1,756	13	452	1	906	1	104	5	294				
255	JENNINGS LODGE-WEBSTER	4	362					3	88			1	274		
256	KELLEY POINT-KELLEY POINT 13														
257	KELLEY POINT-LEDBETTER														
258	KELLEY POINT-MARINE														
259	KELLEY POINT-SIMMONS														
260	KELLY BUTTE-BINNSMEAD	5	254	1	43			2	208			2	3		
261	KELLY BUTTE-FAIRLAWN	3	930	1	11			2	919						
262	KELLY BUTTE-MALL 205	8	5,430					4	5,414	3	15	1	2		
263	KELLY BUTTE-MCGREW	8	212			1	87	3	89	3	19			1	17
264	KING CITY-BULL MOUNTAIN	1	2	1	2										
265	KING CITY-FISCHER	2	40					1	14	1	26				
266	KING CITY-HAZELBROOK														
267	KING CITY-NORTH	2	815							1	531	1	283		
268	KING CITY-SUMMERFIELD														
269	LAKE LABISH-LAKE LABISH														
270	LELAND-BEAVERCREEK	28	5,844	6	495			8	50	10	5,163	3	131	1	6

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2019 Outages by Cause Natural

	Feeder Name	Total Natural		Adverse Environment		Lightning		Animal		Non-Preventable Tree Contacts*		Preventable Tree Contacts*		Unknown	
		Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
271	LELAND-CARUS	67	27,785	18	624	7	42	7	12	31	26,967	2	7	2	133
272	LELAND-KELM	3	61					2	6	1	55				
273	LENTS-13101	15	938			6	382	7	550	2	6				
274	LENTS-HAPPY VALLEY	5	5,988							4	5,984	1	4		
275	LENTS-MT SCOTT	3	1,119					1	5	1	620			1	494
276	LENTS-NORTH	4	62					3	60			1	2		
277	LIBERAL-LIBERAL 13	23	8,267					5	79	14	7,513	1	663	3	12
278	LIBERAL-SAWMILL														
279	LIBERTY-BROWNING	7	326			6	138			1	188				
280	LIBERTY-LONE OAK	4	128					4	128						
281	LIBERTY-MORNINGSIDE	3	190	1	3			1	182	1	6				
282	LIBERTY-ROSEDALE	14	313			1	5	4	76	7	218	1	11	1	2
283	LIBERTY-SKYLINE	9	849					7	169	1	104	1	576		
284	LIBERTY-VISTA	5	293					5	293						
285	MAIN-AIRPORT	3	6					2	4	1	2				
286	MAIN-BENTLEY	2	29					1	16	1	13				
287	MAIN-EXPRESS	10	1,704					4	75	5	1,597			1	32
288	MAIN-GRIFFIN OAKS														
289	MAIN-JONES FARM														
290	MAIN-RIVER														
291	MARKET-ENGLEWOOD	9	3,955					6	269	2	3,655	1	31		
292	MARKET-FAIRGROUNDS	3	48					2	43	1	5				
293	MARKET-HAWTHORNE	5	23	1	2			4	21						
294	MARKET-PARK	5	912					3	108	2	803				
295	MARQUAM-ORANGE														
296	MARQUAM-TILIKUM														
297	MAXIM-MAXIM 13														
298	MCCLAIN-COTTAGE	5	96					4	95	1	1				
299	MCCLAIN-FRONT	6	349			1	9	3	79	2	261				
300	MCCLAIN-HOLLYWOOD	7	240					5	228	1	8	1	4		

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2019 Outages by Cause Natural

	Feeder Name	Total Natural		Adverse Environment		Lightning		Animal		Non-Preventable Tree Contacts*		Preventable Tree Contacts*		Unknown	
		Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
301	MCGILL-HORSETAIL	2	7	1	5					1	2				
302	MCGILL-LATOURELL														
303	MERIDIAN-65TH														
304	MERIDIAN-BORLAND	3	1,751	1	4					2	1,747				
305	MERIDIAN-CHILDS														
306	MERIDIAN-LAKEVIEW	2	7							2	7				
307	MERIDIAN-MERIDIAN 13	8	603	1	7					7	595				
308	MERIDIAN-NYBERG														
309	MERIDIAN-PILKINGTON	7	5,483					4	41	1	4,241	2	1,200		
310	MERIDIAN-SAGERT														
311	MIDDLE GROVE-BROWN	5	34	1	5			1	11	1	13	1	4	1	2
312	MIDDLE GROVE-CHEMEKETA														
313	MIDDLE GROVE-CORDON	4	1,304			1	1	1	3	1	1,279	1	21		
314	MIDDLE GROVE-SWEGLE	3	82					2	67					1	15
315	MIDDLE GROVE-WEST	1	123	1	123										
316	MIDWAY-DIVISION	3	65					1	54	1	10			1	1
317	MIDWAY-DOUGLAS	4	116					1	13	1	3	2	100		
318	MIDWAY-LYNCH	5	193					3	187	1	5			1	1
319	MIDWAY-POWELLHURST	8	394	1	178	1	13	2	14	3	150			1	40
320	MILL CREEK-EASTLAND	11	111	2	4			6	50	2	56	1	2		
321	MILL CREEK-KUEBLER														
322	MILL CREEK-MILL CREEK 13														
323	MOLALLA-BUCKAROO	3	192					2	190					1	1
324	MOLALLA-FOREST	17	260	7	65			2	27	6	166	1	1	1	1
325	MOLALLA-MARQUAM	37	5,501	7	14	1	6	2	4	14	2,601	9	2,678	4	198
326	MOLALLA-YODER	6	1,742	2	7	1	2			1	1,674	1	56	1	2
327	MT ANGEL-EAST	4	6					2	3	1	1			1	2
328	MT ANGEL-WEST	10	701			2	8			4	242	1	2	3	449
329	MT PLEASANT-CLAIRMONT	7	1,472	1	7			3	1,459	2	3	1	3		
330	MT PLEASANT-MT VIEW	5	28					3	8	2	20				

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2019 Outages by Cause Natural

	Feeder Name	Total Natural		Adverse Environment		Lightning		Animal		Non-Preventable Tree Contacts*		Preventable Tree Contacts*		Unknown	
		Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
331	MT PLEASANT-RIVERCREST	5	124					3	67	1	55			1	2
332	MT PLEASANT-SOUTH END	14	1,140	3	151	3	322	6	66	1	397	1	203		
333	MULINO-NORTH	11	245	3	135	1	1			7	109				
334	MULINO-SOUTH	19	543	5	48	1	2	4	25	7	446	1	6	1	16
335	MULTNOMAH-13176	9	92					3	28	4	12			2	52
336	MULTNOMAH-13177	20	2,897	3	636			3	15	11	2,195	1	41	2	10
337	MULTNOMAH-13181	17	1,275	4	363			5	64	4	144	1	0	3	704
338	MULTNOMAH-MULTNOMAH 13	11	1,476	1	14			2	26	7	1,435	1	1		
339	MURRAYHILL-KINTON														
340	MURRAYHILL-MURRAYHILL 13														
341	MURRAYHILL-REUSSER	3	21					1	5			2	15		
342	MURRAYHILL-TEAL	5	246					3	183	1	2	1	61		
343	NEWBERG-CHEHALEM	22	3,412	2	592			6	187	9	1,800			5	833
344	NEWBERG-DUNDEE	16	5,887	1	6			6	336	7	5,515			2	29
345	NEWBERG-HOOVER PARK	5	303					3	301	1	1			1	1
346	NEWBERG-NORTH COLLEGE	4	11					4	11						
347	NORTH MARION-CROSBY	7	2,639					2	145	4	2,491			1	3
348	NORTH MARION-FRONT														
349	NORTH MARION-HUBBARD	14	3,493	3	100			1	81	3	1,164	2	2,019	5	128
350	NORTH MARION-MCLAREN	9	296	3	208			2	4	3	83			1	2
351	NORTH PLAINS-MASON HILL	26	6,051	9	1,563			1	9	12	4,144	3	333	1	2
352	NORTH PLAINS-NORTH PLAINS 13	18	2,285	2	9					12	2,109	2	152	2	15
353	NORTHERN-11009	2	12			1	5							1	6
354	NORTHERN-11016	5	11					3	5	1	3			1	3
355	NORTHERN-11071	3	47					3	47						
356	OAK GROVE-LAKE HARRIET	7	794	2	28					3	741			2	25
357	OAK GROVE-WHITE WATER	1	10							1	10				
358	OAK HILLS-FIVE OAKS	2	92					2	92						
359	OAK HILLS-GREENBRIER														
360	OAK HILLS-OAK HILLS 13														

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2019 Outages by Cause Natural

Feeder Name	Total Natural		Adverse Environment		Lightning		Animal		Non-Preventable Tree Contacts*		Preventable Tree Contacts*		Unknown		
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	
361	OAK HILLS-SOMERSET														
362	OAK HILLS-WALKER														
363	OREGON STEEL-OREGON STEEL 13														
364	ORENCO-231ST														
365	ORENCO-AMBERGLEN														
366	ORENCO-BASELINE	1	53					1	53						
367	ORENCO-ORENCO 13	1	1					1	1						
368	ORENCO-PRIMATE														
369	ORENCO-WILKINS														
370	ORIENT-BARLOW	12	237	2	29	1	18	5	64	2	6		2	121	
371	ORIENT-ORIENT 13	18	1,216	2	57			1	23	12	1,081		3	56	
372	ORIENT-OXBOW	35	3,455	9	881	1	1			23	2,560		2	13	
373	OSWEGO-IRON MOUNTAIN	6	841					2	4	1	1	3	836		
374	OSWEGO-MARYLHURST	14	5,931	1	4	3	584	6	151	2	5,100	1	7	1	86
375	OSWEGO-PALATINE	20	4,205					3	38	17	4,167				
376	OSWEGO-STAFFORD														
377	OXFORD-FAIRVIEW	10	363			5	298	4	65	1	0				
378	OXFORD-LEE	6	164					5	153					1	11
379	OXFORD-MADRONA	5	268			5	268								
380	OXFORD-OXFORD 13	5	107					3	40	2	67				
381	OXFORD-RURAL														
382	OXFORD-SHELTON	5	584					4	101	1	484				
383	PELTON-ROUND BUTTE														
384	PENINSULA PARK-OCKLEY GREEN	6	12,961	1	9					3	12,864	1	5	1	83
385	PENINSULA PARK-PENINSULA PARK	3	17					1	9	2	8				
386	PLEASANT VALLEY-BAXTER	6	3,239	2	33					3	3,189	1	17		
387	PLEASANT VALLEY-CLATSOP	3	659					2	322	1	337				
388	PLEASANT VALLEY-MOON	4	193			1	174	1	15	2	4				
389	PLEASANT VALLEY-PLEASANT 13	16	3,833	1	12			3	23	10	3,609			2	188
390	PLEASANT VALLEY-SUN	10	2,356					3	9	6	2,326	1	20		

*For detailed Tree Contacts, see Outages by Tree Contacts report

Outs = Outages
Hrs = # of customers * duration hrs

2019 Outages by Cause Natural

	Feeder Name	Total Natural		Adverse Environment		Lightning		Animal		Non-Preventable Tree Contacts*		Preventable Tree Contacts*		Unknown	
		Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
391	PORTLAND WATER-PUMPING														
392	PORTSMOUTH-CARBIDE	6	423	1	5			1	2	3	396	1	19		
393	PORTSMOUTH-DISPOSAL														
394	PORTSMOUTH-WILLIS	2	163					2	163						
395	PROGRESS-GREENBURG	6	69	1	1			4	65	1	3				
396	PROGRESS-HALL														
397	PROGRESS-ROBINSON	1	8					1	8						
398	PROGRESS-SAWYER														
399	PROGRESS-WASHINGTON SQ #1														
400	PROGRESS-WASHINGTON SQ #2														
401	RALEIGH HILLS-DOGWOOD	12	1,079	1	7			1	14	9	709	1	349		
402	RALEIGH HILLS-MONTCLAIR	13	1,757					7	213	3	1,453	3	91		
403	RALEIGH HILLS-OLESON	12	1,951	2	48			3	528	6	1,363	1	11		
404	RAMAPO-EMERALD	6	750	1	1			4	518	1	231				
405	RAMAPO-GILBERT	11	278					6	156	3	20	1	64	1	38
406	RAMAPO-RAMAPO 13	14	2,128	4	269			4	102	3	6	1	1,727	2	25
407	REDLAND-HENRICI	34	10,541	4	116			3	57	22	7,379	4	2,982	1	6
408	REDLAND-REDLAND 13	38	4,876	15	95	1	1	8	55	11	3,104	1	201	2	1,421
409	REEDVILLE-AUGUSTA	2	8					1	1	1	8				
410	REEDVILLE-BLANTON	5	1,839	1	7					3	1,644	1	188		
411	REEDVILLE-HAZELDALE	14	4,834			1	6	4	68	5	83	3	4,676	1	1
412	REEDVILLE-INTEL #5														
413	REEDVILLE-TV	2	18					1	13	1	5				
414	RIVERGATE SOUTH-11010														
415	RIVERGATE SOUTH-11011	1	14					1	14						
416	RIVERGATE SOUTH-PEARCY														
417	RIVERGATE SOUTH-SWIFT														
418	RIVERVIEW-FULTON	8	397					1	3	6	381	1	14		
419	RIVERVIEW-MACADAM	3	47	1	2					1	39			1	6
420	RIVERVIEW-TERWILLIGER	6	617					1	19	3	516	2	83		

*For detailed Tree Contacts, see Outages by Tree Contacts report

Outs = Outages
Hrs = # of customers * duration hrs

2019 Outages by Cause Natural

Feeder Name	Total Natural		Adverse Environment		Lightning		Animal		Non-Preventable Tree Contacts*		Preventable Tree Contacts*		Unknown	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
421	ROCKWOOD-AIRPORT													
422	ROCKWOOD-BOEING													
423	ROCKWOOD-INDUSTRIAL													
424	ROCKWOOD-REYNOLDS	5	216					3	152	1	2	1	62	
425	ROCKWOOD-ROCKWOOD 13	3	687					3	687					
426	ROCKWOOD-WILKES													
427	ROSEMONT-HIDDEN SPRINGS	6	133	1	6			1	2	2	115	1	7	1 3
428	ROSEMONT-MOSSY BRAE	3	145					1	25	2	120			
429	ROSEMONT-OVERLOOK	8	1,384			1	1	3	42	2	269			2 1,072
430	ROSEWAY-ALEXANDER													
431	ROSEWAY-ESPLANADE	4	32					3	31	1	1			
432	ROSEWAY-ROSEWAY 13	1	17					1	17					
433	RUBY-CARLINE	10	3,302					4	2,865	5	434	1	2	
434	RUBY-JUNCTION	4	307	1	1			2	82	1	224			
435	SALEM-13260													
436	SALEM-13261													
437	SALEM-13262													
438	SALEM-13263													
439	SALEM-13264													
440	SALEM-UNION													
441	SANDY-362ND	40	18,529	12	2,972	1	99	3	495	19	9,884	2	2,212	3 2,868
442	SANDY-BLUFF	13	2,218	3	500			1	7	6	1,680	1	10	2 22
443	SANDY-SANDY 13	58	7,344	10	683			3	21	38	5,070	5	1,561	2 9
444	SANDY-WILDCAT	25	5,168	7	2,417			2	7	14	1,618	2	1,126	
445	SCAPPOOSE-SAUVIE ISLAND													
446	SCHOLLS FERRY-KEMMER	3	4,149					1	25	1	1	1	4,124	
447	SCHOLLS FERRY-RAINBOW	28	6,035	1	5			4	148	17	963	3	4,509	3 409
448	SCHOLLS FERRY-ROY ROGERS	2	4					1	3	1	1			
449	SCOGGINS-CHERRY GROVE	21	1,415	3	291			7	228	10	890			1 7
450	SCOGGINS-LAURELWOOD	24	788	1	21			8	128	11	591			4 48

*For detailed Tree Contacts, see Outages by Tree Contacts report

Outs = Outages
Hrs = # of customers * duration hrs

2019 Outages by Cause Natural

	Feeder Name	Total Natural		Adverse Environment		Lightning		Animal		Non-Preventable Tree Contacts*		Preventable Tree Contacts*		Unknown	
		Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
451	SCOTTS MILLS-SCOTTS MILLS 13	46	3,934	7	210	1	3	4	38	31	3,537	2	138	1	8
452	SELLWOOD-KELLOGG PARK	3	324					1	48			1	146	1	130
453	SELLWOOD-SELLWOOD 13	6	195					5	184			1	11		
454	SELLWOOD-WAVERLY	8	2,299	1	4			3	212	3	2,067	1	16		
455	SHERIDAN-EAST	9	203							7	197	2	6		
456	SHERIDAN-KADELL	7	1,456	1	1			1	61	4	392	1	1,002		
457	SHUTE-LINDE 1 35KV														
458	SHUTE-RONLER 1														
459	SHUTE-RONLER 2														
460	SILVERTON-NORTH	5	32							4	30	1	2		
461	SILVERTON-SOUTH	31	5,385	5	3,157			4	23	17	1,962	5	243		
462	SILVERTON-WEST	8	345					3	272	4	71			1	1
463	SIX CORNERS-13359	10	780					7	440	3	340				
464	SIX CORNERS-13360	5	278	1	2			1	2	3	274				
465	SIX CORNERS-BORCHERS	12	2,925					5	117	6	2,752			1	56
466	SIX CORNERS-CHAPMAN	10	258			1	128	5	81	3	42			1	7
467	SIX CORNERS-SIX CORNERS 13	1	9							1	9				
468	SP NEWSPRINT-NEWBERG														
469	SPRING HILL-SPRING HILL														
470	SPRINGBROOK-FERNWOOD	6	353					3	18	3	335				
471	SPRINGBROOK-ST PAUL	10	137					2	76	6	51	1	2	1	8
472	SPRINGBROOK-VILLA														
473	SPRINGBROOK-ZIMRI	6	304	1	6			1	210	2	22			2	66
474	ST HELENS-KASTER														
475	ST LOUIS-EAST	2	58	1	57			1	1						
476	ST LOUIS-NORTH	18	3,219	1	127	4	66	1	25	3	1,556	2	1,429	7	16
477	ST LOUIS-WEST	5	244	1	236	2	6	2	2						
478	ST MARYS EAST-BETHANY														
479	ST MARYS EAST-ELMONICA	1	83											1	83
480	ST MARYS EAST-JENKINS														

*For detailed Tree Contacts, see Outages by Tree Contacts report

Outs = Outages
Hrs = # of customers * duration hrs

2019 Outages by Cause Natural

Feeder Name	Total Natural		Adverse Environment		Lightning		Animal		Non-Preventable Tree Contacts*		Preventable Tree Contacts*		Unknown		
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	
481	ST MARYS EAST-MILLIKAN														
482	ST MARYS EAST-ST MARYS 13														
483	STEPHENS-11001														
484	STEPHENS-11020	1	2							1	2				
485	STEPHENS-11054 NETWORK														
486	STEPHENS-11055 NETWORK														
487	STEPHENS-11092 NETWORK														
488	STEPHENS-11093 NETWORK														
489	STEPHENS-11094 NETWORK														
490	STEPHENS-11095 NETWORK														
491	STEPHENS-11097 NETWORK														
492	STEPHENS-11098														
493	STEPHENS-11099 NETWORK														
494	STIMSON LUMBER-FORESTEX	1	4					1	4						
495	SULLIVAN-ROBINWOOD	24	1,538	2	4	2	61	13	802	5	396	1	170	1	105
496	SULLIVAN-SALAMO	5	479					4	340	1	140				
497	SULLIVAN-SUSSEX	3	35					2	33			1	2		
498	SULLIVAN-TANNER	2	74					2	74						
499	SULLIVAN-WILLAMETTE	4	283							3	253			1	30
500	SULZER PUMPS-115B														
501	SUMMIT-GOVERNMENT CAMP	1	2											1	2
502	SUMMIT-MEADOWS														
503	SUMMIT-SUMMIT 13														
504	SUNSET-BLANCHET														
505	SUNSET-COLFAX														
506	SUNSET-CORNELL														
507	SUNSET-DORION														
508	SUNSET-IDTB														
509	SUNSET-IDTC														
510	SUNSET-INTEL D1B1														

*For detailed Tree Contacts, see Outages by Tree Contacts report

Outs = Outages
Hrs = # of customers * duration hrs

2019 Outages by Cause Natural

	Feeder Name	Total Natural		Adverse Environment		Lightning		Animal		Non-Preventable Tree Contacts*		Preventable Tree Contacts*		Unknown	
		Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
511	SUNSET-INTEL D1X1														
512	SUNSET-KOMATSU #1														
513	SUNSET-LANE														
514	SUNSET-MCCALL														
515	SUNSET-MEEK														
516	SUNSET-NIXON														
517	SUNSET-PAULING														
518	SUNSET-SPALDING														
519	SUNSET-WHITMAN														
520	SUNSET-YOUNG														
521	SWAN ISLAND-BASIN														
522	SWAN ISLAND-DOLPHIN														
523	SWAN ISLAND-FREIGHTLINER														
524	SWAN ISLAND-GOING														
525	SWAN ISLAND-SHIPYARD														
526	SYLVAN-BARNES	20	3,660	2	6					18	3,654				
527	SYLVAN-PATTON	26	3,047	2	431			7	554	15	2,036	1	23	1	3
528	TABOR-82ND	2	344					1	215	1	129				
529	TABOR-HOSPITAL	3	102					2	86					1	15
530	TABOR-TABOR 13	3	30	1	18							2	11		
531	TEKTRONIX-DUCKS														
532	TEKTRONIX-HOCKEN	3	148											3	148
533	TEKTRONIX-MEADOW	13	1,491	1	58			5	430	7	1,003				
534	TEKTRONIX-NORTH														
535	TEKTRONIX-SHANNON	9	1,818					4	57	4	1,211	1	550		
536	TEKTRONIX-SOUTH	7	704	1	19					5	330			1	356
537	TEKTRONIX-TEKTRONIX 13														
538	TEKTRONIX-TERMAN														
539	TEKTRONIX-WEST														
540	TEMP B-NORTH														

*For detailed Tree Contacts, see Outages by Tree Contacts report

Outs = Outages
Hrs = # of customers * duration hrs

2019 Outages by Cause Natural

Feeder Name	Total Natural		Adverse Environment		Lightning		Animal		Non-Preventable Tree Contacts*		Preventable Tree Contacts*		Unknown	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
541 TEMP B-SOUTH														
542 TIGARD-13336	2	12	1	1			1	11						
543 TIGARD-13337	2	129							1	3			1	126
544 TIGARD-13361	5	1,165					2	68	3	1,097				
545 TIGARD-13362	2	48	1	40			1	7						
546 TIGARD-TIGARD 13	10	1,198					9	959	1	239				
547 TOWN CENTER-LAWNFIELD														
548 TOWN CENTER-MONTEREY														
549 TOWN CENTER-NORTH														
550 TOWN CENTER-PRECISION CASTPARTS														
551 TOWN CENTER-SOUTH														
552 TOWN CENTER-SUNNYBROOK	2	408					2	408						
553 TOWN CENTER-VALLEY VIEW	2	96					1	44					1	52
554 TROJAN-EAST														
555 TUALATIN-AVERY														
556 TUALATIN-CIPOLE	1	1							1	1				
557 TUALATIN-HERMAN	3	42					2	36			1	6		
558 TUALATIN-IBACH	8	2,808	2	8					6	2,800				
559 TUALATIN-LEVETON														
560 TUALATIN-TUALATIN 13														
561 TURNER-CASCADE	12	569	4	23			1	8	2	221	3	310	2	7
562 TURNER-TURNER 13	11	90	1	2					7	74			3	14
563 TWILIGHT-BREMER	25	2,664	3	1,263	4	42	2	6	13	1,012	2	340	1	2
564 UNIONVALE-UNIONVALE 13	15	398	2	101			5	12	6	278	2	7		
565 UNIVERSITY-MILL	3	58					1	51	2	8				
566 UNIVERSITY-TRADE	14	14,098			1	100	7	215	6	13,784				
567 URBAN-BARBUR	1	594							1	594				
568 URBAN-CAMPUS														
569 URBAN-CORBETT	5	2,482					1	5	2	2,434			2	43
570 URBAN-GAINES	2	37							1	24	1	13		

*For detailed Tree Contacts, see Outages by Tree Contacts report

Outs = Outages
Hrs = # of customers * duration hrs

2019 Outages by Cause Natural

	Feeder Name	Total Natural		Adverse Environment		Lightning		Animal		Non-Preventable Tree Contacts*		Preventable Tree Contacts*		Unknown	
		Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
571	URBAN-GIBBS														
572	URBAN-KELLY	2	6							2	6				
573	URBAN-LANDING														
574	URBAN-MEDICAL														
575	URBAN-OHSU														
576	WACKER-WACKER 1														
577	WACONDA-NORPAC														
578	WACONDA-RIVER	6	451							4	438	1	7	1	5
579	WACONDA-WACONDA 13	8	2,412	1	920			1	0	2	29			4	1,462
580	WALLACE-WALLACE 13	15	321	1	108			3	125	8	71	2	11	1	7
581	WALLACE-WILLOW LAKE	1	13											1	13
582	WELCHES-WELCHES 13	26	7,411	1	7	2	20	1	14	20	7,356	1	10	1	4
583	WELCHES-ZIG ZAG	60	10,126	7	1,022			1	4	45	8,559	1	6	6	534
584	WEST PORTLAND-72ND	1	122							1	122				
585	WEST PORTLAND-NORTH	6	51					3	29	2	10			1	13
586	WEST PORTLAND-PACIFIC	11	4,153					6	99	2	717	3	3,337		
587	WEST PORTLAND-WEST PORTLAND 13	5	5,941					1	10	3	5,610	1	321		
588	WEST UNION-ALOCLEK														
589	WEST UNION-CORNELIUS PASS	21	5,008	1	216					19	4,538	1	254		
590	WEST UNION-JACOBSON														
591	WEST UNION-WEST UNION 13	2	613			2	613								
592	WILLAMINA-BRIDGE	16	398	2	210			5	106	7	52	1	26	1	3
593	WILLAMINA-BUELL	19	1,219	3	293	1	3	2	10	12	905	1	7		
594	WILLAMINA-LUMBER														
595	WILLBRIDGE-WILLBRIDGE #1														
596	WILLBRIDGE-WILLBRIDGE #4														
597	WILSONVILLE-BOECKMAN	3	7					2	6					1	1
598	WILSONVILLE-CHARBONNEAU	2	78							2	78				
599	WILSONVILLE-CITY	3	217	1	26					2	190				
600	WILSONVILLE-MENTORTEK														

*For detailed Tree Contacts, see Outages by Tree Contacts report

Outs = Outages
Hrs = # of customers * duration hrs

2019 Outages by Cause Natural

Feeder Name	Total Natural		Adverse Environment		Lightning		Animal		Non-Preventable Tree Contacts*		Preventable Tree Contacts*		Unknown	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
601 WILSONVILLE-PARKWAY														
602 WILSONVILLE-VILLEBOIS	2	243					1	12	1	231				
603 WILSONVILLE-WEST	10	7,696	1	4			2	17	7	7,674				
604 WOODBURN-CANNERY	7	234					6	178					1	56
605 WOODBURN-EAST	6	174					3	84	2	36	1	54		
606 WOODBURN-TOMLIN	7	6,868	1	2			2	281	1	2			3	6,582
607 WOODBURN-WEST	11	6,247	1	11			7	294	1	5,894	1	15	1	32
608 YAMHILL-CARLTON	17	2,205	2	825			1	1	13	1,371	1	8		
609 YAMHILL-YAMHILL 13	13	1,321	1	167			5	33	6	1,011			1	109
Grand Totals:	3,718	699,304	472	51,354	123	8,379	908	45,768	1,699	492,830	229	62,983	287	37,991

*For detailed Tree Contacts, see Outages by Tree Contacts report

Outs = Outages
Hrs = # of customers * duration hrs

Section V

Outages by Cause System

This section provides the total number of customer outages (frequency) and customer outage hours (duration) caused by system (failure of equipment or loss of source) events. The information is presented by feeder and attributed to one of the following categories¹:

- PGE Equipment²
- Loss of Substation
- Loss of Transmission
- Human Element
- Public
- Planned³

NOTES:

- Idle feeders are not included in this list
- Feeders may be omitted if they are a part of an alternate/multiple feeder service

¹ See Section IX – Cause Code Categories and Mapping for detailed causes for each category

² The Cutout, Fuse, Arrestor category is included for reference. Outage events in this column are captured in the PGE Equipment column.

³ The Planned category is included for reference. Planned outages are not included as part of Total System values or sums.

2019 Outages by Cause System

Feeder Name	Total System		PGE Equipment		Cutout, Fuse, Arrestor ¹		Loss of Substation		Loss of Transmission		Human Factor		Public		Planned ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
1 ABERNETHY-CLACKAMAS HEIGHTS	1	24	1	24											8	85
2 ABERNETHY-OREGON CITY	4	13	3	11	1	5							1	1	32	164
3 ABERNETHY-TRANSIT	4	19	4	19											29	309
4 ABERNETHY-WASHINGTON	2	23	2	23	1	9									22	435
5 ALDER-ANKENY	1	2	1	2											4	2,103
6 ALDER-IRVING	9	586	8	482	2	32							1	104	16	584
7 ALDER-LINCOLN	5	5,496	4	5,495									1	1	4	60
8 ALDER-STARK	4	169	1	1							1	1	2	166	20	142
9 ALDER-TAYLOR	9	67	9	67	2	22									10	237
10 ALDER-YAMHILL	5	62	5	62	1	50									17	1,362
11 AMITY-AMITY 13	17	4,290	15	3,803	5	117							2	487	12	23
12 AMITY-BELLEVUE	24	2,987	19	584	12	32							5	2,404	27	23
13 ARLETA-52ND	19	1,033	19	1,033	2	10									15	159
14 ARLETA-FOSTER	4	12	4	12											16	428
15 ARLETA-HAROLD	6	183	5	175									1	8	20	783
16 ARLETA-POWELL	6	65	5	63	1	35							1	2	17	427
17 ARLETA-STEELE	12	900	7	691							1	43	4	167	18	346
18 BANKS-BANKS 13	9	102	9	102											17	186
19 BANKS-CEDAR CANYON	12	309	12	309	2	8									45	384
20 BARNES-BATTLE CREEK	4	386	4	386											49	106
21 BARNES-BOONE	16	1,024	11	758	3	294							5	265	6	119
22 BARNES-COMMERCIAL	13	848	10	789	6	54							3	59	9	12
23 BARNES-SUNNYSIDE	8	422	6	302									2	120	6	107
24 BEAVER-KB PIPELINE																
25 BEAVERTON-ALLEN	9	1,337	8	189	1	2							1	1,148		
26 BEAVERTON-JAMIESON	2	1,408	2	1,408											7	4
27 BEAVERTON-NORTHWEST	2	112	1	111									1	2	6	299
28 BEAVERTON-WEST SLOPE	10	451	10	451	1	1									3	39
29 BELL-BATTIN	10	1,539	7	387	1	2	1	577					2	575	3	25
30 BELL-BRENTWOOD	3	39	2	7	1	5							1	31	3	9
31 BELL-FLAVEL	9	69	7	56	1	21							2	14	7	34
32 BELL-JOHNSON CREEK															2	94
33 BELL-KENDALL	6	65	5	54	1	5							1	12	2	85
34 BELL-KING															5	70
35 BELL-SOUTHGATE	9	525	6	488	1	239							3	37	4	33
36 BELL-WICHITA	4	20	3	19									1	1	9	131

¹ Values captured in the PGE Equipment total

² Planned is not included as part of Total System values

Outs = Outages

Hrs = # of customers * duration hrs

2019 Outages by Cause System

Feeder Name	Total System		PGE Equipment		Cutout, Fuse, Arrestor ¹		Loss of Substation		Loss of Transmission		Human Factor		Public		Planned ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
37 BETHANY-BURTON	5	155	5	155											1	3
38 BETHANY-GERMANTOWN	4	1,524	2	12	1	10							2	1,512	27	1,125
39 BETHANY-KAISER	7	881	6	880									1	1	16	713
40 BETHANY-LAIDLAW	3	12	3	12											7	8
41 BETHANY-SPRINGVILLE	3	7	3	7	1	4									12	143
42 BETHANY-THOMPSON	2	5	2	5	1	4									1	1
43 BETHEL-FRUITLAND	17	234	16	228	5	88							1	6	5	58
44 BETHEL-GEER	6	22	6	22											145	535
45 BETHEL-MACLEAY	7	197	7	197	2	91									30	37
46 BLUE LAKE-BLUE LAKE 13	8	715	5	657	1	2							3	58	3	6
47 BLUE LAKE-SUNDIAL	6	63	4	15									2	48	6	4
48 BLUE LAKE-TOYO TANSO																
49 BOISE CASCADE-BOISE #1																
50 BOONES FERRY-GOODALL	8	3,657	5	231	1	23							3	3,426	5	3
51 BOONES FERRY-KRUSE	4	29	3	26									1	3	16	83
52 BOONES FERRY-LAKE GROVE	12	561	9	540	1	65							3	21	93	1,529
53 BOONES FERRY-MOUNTAIN PARK	5	417	5	417											28	304
54 BOONES FERRY-WEMBLEY PARK	12	3,504	9	3,464									3	40	41	384
55 BORING-282ND	14	338	10	322	2	249					1	2	3	13	58	414
56 BORING-CITY	19	5,594	12	1,009	2	129							7	4,585	76	409
57 BORING-TELFORD	16	4,968	12	1,306	1	4	1	3,311					3	351	103	1,027
58 BRIGHTWOOD-BRIGHTWOOD 13	11	418	10	149	2	94							1	269	189	1,526
59 BRIGHTWOOD-NORTH BANK	8	1,921	5	45	1	10							3	1,876	4	6
60 BROOKWOOD-BORWICK	4	616	3	555									1	61		
61 BROOKWOOD-BROOKWOOD 13																
62 BROOKWOOD-SUNRISE	2	228	2	228											3	8
63 CANBY-13644	10	1,543	8	428	3	405					1	2	1	1,113	22	31
64 CANBY-BUTTEVILLE	11	117	9	99	2	54							2	18	7	8
65 CANBY-FILBERT																
66 CANBY-ZIMMERMAN	14	210	11	62	1	2							3	148	47	114
67 CANYON-13114 NETWORK #1																
68 CANYON-13115 NETWORK #1																
69 CANYON-13116 NETWORK #1																
70 CANYON-13117 NETWORK #1																
71 CANYON-13118 PSU																
72 CANYON-13120	1	15											1	15		

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2019 Outages by Cause System

Feeder Name	Total System		PGE Equipment		Cutout, Fuse, Arrestor ¹		Loss of Substation		Loss of Transmission		Human Factor		Public		Planned ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
73 CANYON-13121																
74 CANYON-13122 NETWORK #2																
75 CANYON-13123 NETWORK #2																
76 CANYON-13124 NETWORK #2																
77 CANYON-13125 NETWORK #2	1	1											1	1		
78 CANYON-13133 NETWORK #3	1	5											1	5		
79 CANYON-13134 NETWORK #3																
80 CANYON-13135 NETWORK #3																
81 CANYON-13136 NETWORK #3																
82 CANYON-21ST	1	8,643	1	8,643											35	1,003
83 CANYON-23RD	4	40	4	40	1	31									42	3,164
84 CANYON-BURNSIDE	6	422	3	371									3	51	47	33,055
85 CANYON-CANYON 13	3	12	3	12											5	30
86 CARVER-ALMOND	2	323	2	323	1	162									4	24
87 CARVER-CARVER 13	21	893	16	592	3	199							5	301	94	389
88 CARVER-NORTH	2	463	1	453									1	10	4	10
89 CARVER-RIVERBEND																
90 CARVER-SOUTH																
91 CARVER-WOODS	13	251	6	12	1	1							7	239	72	3,877
92 CEDAR HILLS-CEDAR HILLS 13																
93 CEDAR HILLS-LEAHY	15	548	8	491	1	26							7	56	36	428
94 CEDAR HILLS-SHOPPING CENTER	8	264	8	264	1	30									26	487
95 CEDAR HILLS-SKYLINE																
96 CEDAR HILLS-ST VINCENT																
97 CEDAR HILLS-SYLVAN	13	941	13	941	1	4									3	7
98 CENTENNIAL-BARKER	20	832	17	780	5	237							3	52	22	566
99 CENTENNIAL-BRAECROFT	7	3,585	5	136	2	76							2	3,449	9	71
100 CENTENNIAL-CENTENNIAL 13	15	109	11	96									4	13	15	166
101 CENTENNIAL-TREELAND	9	168	7	79	2	33							2	89	36	1,296
102 CLACKAMAS-EVELYN	1	63						1	63						3	48
103 CLACKAMAS-GLADSTONE	15	1,252	13	557	3	315	1	695					1	1	30	420
104 CLACKAMAS-JENNIFER	4	213	2	3	1	1	1	193					1	17		
105 CLACKAMAS-TOLBERT	13	1,013	12	563	2	16	1	450							13	456
106 CLAXTAR-CLAXTAR 13	3	3	3	3	1	2										
107 CLAXTAR-HAYESVILLE	8	416	7	407	5	201							1	9	3	4
108 CLAXTAR-RIDGE	7	473	6	471									1	1		

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2019 Outages by Cause System

Feeder Name	Total System		PGE Equipment		Cutout, Fuse, Arrestor ¹		Loss of Substation		Loss of Transmission		Human Factor		Public		Planned ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
109	COFFEE CREEK-FREEMAN	1	8	1	8										2	8
110	COFFEE CREEK-HOLIDAY	3	23	2	8								1	14	1	2
111	COLTON-DHOOGHE	5	6	4	5	1	2						1	1	11	14
112	COLTON-GRAYS HILL	14	6,270	11	1,066	2	70						3	5,205	41	105
113	CORNELIUS-ADAIR	7	283	7	283	3	253								5	15
114	CORNELIUS-CORNELIUS 13	15	887	15	887	2	24								38	83
115	CORNELIUS-VERBOORT	8	493	7	461								1	32	30	112
116	CORNELL-BLUFFS	6	402	6	402										5	17
117	CORNELL-SALTZMAN	5	3,425	3	708								2	2,717	6	67
118	CORNELL-WESTLAWN	5	130	4	122								1	8	11	336
119	CULVER-GAFFIN	2	21	2	21										2	8
120	CULVER-SANYO #1															
121	CURTIS-11077	1	149										1	149	1	3
122	CURTIS-CURTIS 13	3	121	3	121	1	85								39	754
123	DAYTON-EAST	14	198	13	196	7	25						1	2	27	293
124	DAYTON-LAFAYETTE	13	1,647	11	892	7	343				1	4	1	750	7	28
125	DAYTON-SOUTHWEST	16	1,739	15	1,724	6	159				1	16			5	25
126	DELAWARE-DENVER	13	30,656	7	361	1	16						6	30,295	12	463
127	DELAWARE-INTERSTATE	8	2,685	3	36	1	2				1	1	4	2,647	4	6
128	DELAWARE-LOMBARD	8	85	8	85										47	516
129	DENNY-EAST	5	252	5	252	1	236								31	1,639
130	DENNY-NORTH	4	721	3	556	1	547						1	165	6	27
131	DENNY-SOUTH	11	882	11	882										11	138
132	DENNY-WEST	8	1,344	7	1,340								1	4	12	868
133	DILLEY-DILLEY 13	7	45	6	38	1	3						1	7	33	718
134	DILLEY-SPRINGHILL															
135	DUNNS CORNER-DUNNS CORNER 13	18	5,402	13	247	2	5	2	156				3	4,999	46	218
136	DUNNS CORNER-KELSO	6	174	3	11	1	3						3	163	4	5
137	DURHAM-BONITA	1	2	1	2										11	839
138	DURHAM-BRIDGEPORT	3	60	1	54						1	4	1	3	30	769
139	DURHAM-DURHAM 13	2	129	2	129										7	10
140	DURHAM-POOPLANT															
141	DURHAM-SATTTLER	8	3,893	7	3,891								1	3	130	2,795
142	DURHAM-SOUTH	6	211	5	210						1	2			2	15
143	E-11021	1	11	1	11	1	11								2	101
144	E-11039															

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2019 Outages by Cause System

Feeder Name	Total System		PGE Equipment		Cutout, Fuse, Arrestor ¹		Loss of Substation		Loss of Transmission		Human Factor		Public		Planned ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
145 E-11040	2	357	2	357	1	3									7	53
146 E-11041	4	30	3	28	2	15							1	3	18	3,181
147 E-11042																
148 E-11043																
149 E-11047	5	85	5	85											12	89
150 E-11064	2	25	1	3							1	22				
151 E-13139															4	22
152 E-13140															14	335
153 E-13141															1	1
154 E-13142															1	1
155 E-13144	2	369	1	363									1	5	34	2,496
156 E-13145															8	117
157 E-13148																
158 E-13149	3	2,530	3	2,530											8	55
159 E-13150	4	11	4	11	2	7									13	98
160 EAGLE CREEK-BARTON	9	58	7	28	2	13							2	30	88	586
161 EAGLE CREEK-RIVER MILL	7	21	2	7							1	2	4	12	28	100
162 EASTPORT-76TH	10	388	6	229	2	171							4	159	14	116
163 EASTPORT-PLAZA	3	600	2	575									1	25	9	64
164 ELMA-ELMA 13	6	350	4	122									2	228	1	30
165 ELMA-FOUR CORNERS	10	1,381	9	1,377	1	10							1	4	7	17
166 ELMA-HUDSON	10	3,793	7	587	1	1							3	3,206	3	1
167 ELMA-STATE	2	73	2	73												
168 ESTACADA-ESTACADA 13	7	145	5	76	2	56							2	69	209	5,044
169 ESTACADA-FARADAY	14	6,614	11	771	1	3			1	5,397			2	447	39	177
170 ESTACADA-NORTH FORK	28	163	25	144	4	19					1	9	2	9	17	24
171 FAIRMOUNT-CANDALARIA	9	994	9	994	1	475									25	1,335
172 FAIRMOUNT-MISSION	13	2,425	9	783	4	130							4	1,642	47	1,755
173 FAIRVIEW-CLEAR CREEK																
174 FAIRVIEW-FAIRVIEW 13	1	3	1	3											5	8
175 FAIRVIEW-KENNEL CLUB	7	482	5	194									2	288	8	26
176 FAIRVIEW-TROUTDALE	7	271	6	268							1	2			4	27
177 FAIRVIEW-WOOD VILLAGE	3	24	3	24											20	250
178 FARGO-FARGO 13	26	5,698	21	1,514	2	30			1	3,772			4	411	13	18
179 GALES CREEK-GALES CREEK 13	16	616	11	117	4	56					1	1	4	498	49	163
180 GARDEN HOME-MCKAY	8	2,565	6	203	3	198			1	2,358			1	4	84	2,655

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2019 Outages by Cause System

Feeder Name	Total System		PGE Equipment		Cutout, Fuse, Arrestor ¹		Loss of Substation		Loss of Transmission		Human Factor		Public		Planned ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
181 GARDEN HOME-METZGER	19	13,796	16	827	5	498			1	12,962	1	1	1	5	27	316
182 GLENCOE-GLISAN	7	59	5	55							1	2	1	2	28	1,173
183 GLENCOE-PROVIDENCE	3	107	3	107											2	66
184 GLENCOE-SUNNYSIDE	5	1,035	3	38	1	7					1	3	1	995	8	67
185 GLENCULLEN-BRIDLEMILE	14	478	13	477	4	12					1	1			25	534
186 GLENCULLEN-SUNSET	5	2,871	3	342									2	2,529	9	16
187 GLENDOVEER-13596	4	44	3	20	1	6							1	24	23	798
188 GLENDOVEER-13597	10	10,234	5	171	1	2							5	10,063	4	98
189 GLENDOVEER-13598	9	703	6	243	1	12							3	460	9	61
190 GLENDOVEER-13599	10	555	8	531	1	55					1	21	1	2	3	79
191 GLENDOVEER-CLIFFGATE	20	1,267	18	828	2	28							2	438	75	1,572
192 GLENDOVEER-NORTHEAST	4	436	3	91	1	67							1	345	13	75
193 GLISAN-FAB 2A	1	5							1	5						
194 GLISAN-UTILITY 1B																
195 GORMLEY-MCMINNVILLE WL															19	32
196 GRAND RONDE-AGENCY	7	513	5	233	3	218							2	280	13	63
197 GRAND RONDE-FORTHILL	4	161	3	81									1	80	13	58
198 HARBORTON-BURLINGTON	25	2,135	19	2,087	1	4					2	13	4	35	22	87
199 HARBORTON-LINNTON	1	2											1	2	5	26
200 HARMONY-HARMONY 13	4	261	4	261											2	3
201 HARMONY-INTERNATIONAL	2	29	2	29											7	41
202 HARMONY-LAKE	3	16	3	16											9	92
203 HARMONY-LINWOOD	5	120	5	120	1	11									6	94
204 HARMONY-MILWAUKIE	6	52	2	2									4	50	37	1,537
205 HARMONY-THIESSEN	4	118	2	4									2	114	16	259
206 HARRISON-DAVIS	2	34	2	34											18	378
207 HARRISON-HARRISON 13	6	98	5	87	1	1					1	10			25	1,370
208 HARRISON-IVON	2	27	1	3									1	23	14	279
209 HAYDEN ISLAND-MAINLAND	6	538	3	60									3	479	9	132
210 HAYDEN ISLAND-NORTH SHORE	14	2,908	14	2,908											15	262
211 HAYDEN ISLAND-SOUTH SHORE	5	247	4	246							1	1			6	56
212 HEMLOCK-FREMONT	7	106	7	106	1	3									16	457
213 HEMLOCK-HEMLOCK 13	9	707	7	679							1	26	1	2	35	939
214 HEMLOCK-MASON	5	292	4	277	1	148					1	15			8	77
215 HILLCREST-CASCADIA																
216 HILLCREST-HILLCREST 13	4	59	4	59	1	4										

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2019 Outages by Cause System

Feeder Name	Total System		PGE Equipment		Cutout, Fuse, Arrestor ¹		Loss of Substation		Loss of Transmission		Human Factor		Public		Planned ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
217 HILLCREST-SOUTH																
218 HILLSBORO-DAIRY CREEK	16	743	16	743	5	143									53	1,030
219 HILLSBORO-DENNIS	4	38	4	38											2	7
220 HILLSBORO-JACKSON	10	535	9	533	2	3						1	2	31	622	
221 HILLSBORO-LAUREL	22	2,283	14	467	3	81					1	3	7	1,813	35	116
222 HILLSBORO-SCHOLLS	5	1,272	5	1,272											7	136
223 HOGAN NORTH-BRIGADOON	12	19,596	4	420									8	19,177	21	640
224 HOGAN NORTH-HOGAN NORTH 13	15	438	14	433	3	94							1	5	33	321
225 HOGAN NORTH-LINKS	17	1,394	14	905									3	489	14	213
226 HOGAN NORTH-SALQUIST	7	145	7	145	2	11									5	487
227 HOGAN SOUTH-CLEVELAND	7	203	7	203											24	451
228 HOGAN SOUTH-LAWRENCE	24	12,129	16	552	1	2					1	1	7	11,576	102	2,692
229 HOGAN SOUTH-MAIN	4	459	3	440									1	19	10	66
230 HOGAN SOUTH-PAROPA	7	40	7	40											8	58
231 HOGAN SOUTH-WALLULA	6	247	6	247	1	7									70	2,147
232 HOLGATE-BYBEE	9	47	7	36	1	4							2	11	36	792
233 HOLGATE-GIDEON	2	4	2	4											18	149
234 HOLGATE-HOLGATE 13	5	283	5	283	1	15									45	1,187
235 HOLGATE-KENILWORTH	7	518	7	518	3	317									11	227
236 HOLGATE-RHONE															4	17
237 HUBER-BANY	12	1,249	8	833	1	5							4	416	162	2,875
238 HUBER-FARMINGTON	13	734	10	662									3	72	115	2,989
239 HUBER-HUBER 13	5	2,462	4	2,450									1	12	5	23
240 HUBER-KINNAMAN	15	568	13	394	3	11							2	174	9	86
241 HUBER-MARYVILLE	14	1,758	14	1,758											33	488
242 INDIAN-KEIZER	9	467	9	467	1	11									1	1
243 INDIAN-LABISH	21	2,615	17	481	8	382							4	2,134	29	99
244 INDIAN-NORTH	22	599	19	313	4	48					1	1	2	285	10	211
245 INDIAN-STATION	3	63	2	59									1	4	1	2
246 INDIAN-WEST	18	2,072	15	1,303	4	17							3	769	6	45
247 ISLAND-13180	12	187	9	167	1	30							3	20	26	338
248 ISLAND-13187	11	121	10	119	2	6							1	2	66	595
249 ISLAND-13188	13	346	11	263	4	94							2	83	75	913
250 ISLAND-ISLAND 13	1	5	1	5											2	39
251 JENNINGS LODGE-ADDIE	10	219	10	219	3	119									9	146
252 JENNINGS LODGE-JENNINGS 13	23	1,011	19	854	2	15							4	157	75	1,137

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2019 Outages by Cause System

Feeder Name	Total System		PGE Equipment		Cutout, Fuse, Arrestor ¹		Loss of Substation		Loss of Transmission		Human Factor		Public		Planned ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
253 JENNINGS LODGE-MELDRUM	7	323	4	318							1	1	2	4	24	1,445
254 JENNINGS LODGE-OAK GROVE	2	11	2	11											27	412
255 JENNINGS LODGE-WEBSTER	4	373	3	369									1	3	25	416
256 KELLEY POINT-KELLEY POINT 13																
257 KELLEY POINT-LEDBETTER															5	149
258 KELLEY POINT-MARINE	2	128	1	77									1	51	2	3,156
259 KELLEY POINT-SIMMONS																
260 KELLY BUTTE-BINNSMEAD	5	699	3	82			1	616					1	1	13	267
261 KELLY BUTTE-FAIRLAWN	11	117	9	98	3	74					1	1	1	18	8	115
262 KELLY BUTTE-MALL 205	10	1,415	9	169	1	28	1	1,246							12	130
263 KELLY BUTTE-MCGREW	18	1,618	14	415	1	12							4	1,202	8	38
264 KING CITY-BULL MOUNTAIN															2	50
265 KING CITY-FISCHER	7	3,134	4	190	1	10					1	24	2	2,920	32	1,125
266 KING CITY-HAZELBROOK	1	416	1	416											4	68
267 KING CITY-NORTH	6	387	6	387											19	382
268 KING CITY-SUMMERFIELD															7	173
269 LAKE LABISH-LAKE LABISH																
270 LELAND-BEAVERCREEK	22	336	17	205	3	15							5	131	35	161
271 LELAND-CARUS	30	736	21	527	9	36							9	209	68	199
272 LELAND-KELM	6	1,826	4	254									2	1,573	17	54
273 LENTS-13101	9	1,139	8	1,129	3	1,085							1	10	7	57
274 LENTS-HAPPY VALLEY	12	1,512	10	1,506	3	391							2	6	8	518
275 LENTS-MT SCOTT	2	33	1	32	1	32							1	1	3	44
276 LENTS-NORTH	7	1,445	3	54	1	5	1	1,308			1	2	2	82	6	28
277 LIBERAL-LIBERAL 13	16	3,810	11	41	3	10			1	3,338			4	431	36	198
278 LIBERAL-SAWMILL	1	3							1	3						
279 LIBERTY-BROWNING	2	1,259	1	34	1	34	1	1,225								
280 LIBERTY-LONE OAK	6	5,692	4	154	1	6	2	5,538							1	7
281 LIBERTY-MORNINGSIDE	4	8,598	1	1			2	8,587					1	10	11	36
282 LIBERTY-ROSEDALE	20	1,673	18	637	2	16	1	970					1	65	24	114
283 LIBERTY-SKYLINE	20	9,602	13	292	2	9	2	7,663					5	1,646	4	7
284 LIBERTY-VISTA	3	5,887					1	4,436					2	1,451	2	1
285 MAIN-AIRPORT	11	323	10	320									1	3	34	624
286 MAIN-BENTLEY	8	447	7	445									1	3	21	295
287 MAIN-EXPRESS	9	1,144	9	1,144	3	135									7	265
288 MAIN-GRIFFIN OAKS																

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Hrs = # of customers * duration hrs

2019 Outages by Cause System

Feeder Name	Total System		PGE Equipment		Cutout, Fuse, Arrestor ¹		Loss of Substation		Loss of Transmission		Human Factor		Public		Planned ²		
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	
289	MAIN-JONES FARM																
290	13	3,483	6	1,996									7	1,488	102	3,119	
291	8	274	7	193	1	9							1	82	4	3	
292	13	177	13	177	2	26									1	0	
293	3	56	3	56	3	56									4	13	
294	2	9	2	9	1	2											
295	1	13	1	13											2	3	
296	1	833	1	833													
297	MAXIM-MAXIM 13																
298	5	417	5	417	1	406									4	2	
299	4	248	3	209	2	24							1	39	4	9	
300	3	84	2	3									1	81			
301	7	2,170	6	2,167	1	2							1	3	1	0	
302	2	333	2	333													
303	7	1,811	6	295			1	1,517									
304	3	5	1	3	1	3							2	3	9	28	
305	2	10	1	5									1	5	7	329	
306	3	13	3	13											11	153	
307	20	3,705	12	254	1	21							8	3,450	19	196	
308	1	10	1	10													
309	14	477	14	477	1	2									44	2,181	
310	7	154	6	123	1	19							1	31	6	101	
311	9	2,945	7	13	1	1							2	2,933	3	4	
312	7	1,462	7	1,462	1	1									8	66	
313	18	740	15	235	3	21							3	505	10	80	
314	2	13	2	13											1	1	
315	7	5,835	6	154	2	6							1	5,681	2	10	
316	8	310	7	308									1	2	6	188	
317	19	2,354	17	656	2	37							2	1,698	13	325	
318	10	545	9	544	3	206							1	2	4	22	
319	13	337	10	293									3	43	32	5,597	
320	17	1,029	12	202	2	21						1	41	4	786	129	1,027
321	5	987	5	987													
322	2	1,064	1	5									1	1,059			
323	21	736	15	637	3	10							6	100	23	64	
324	12	4,530	10	1,423	2	8							2	3,106	36	43	

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2019 Outages by Cause System

Feeder Name	Total System		PGE Equipment		Cutout, Fuse, Arrestor ¹		Loss of Substation		Loss of Transmission		Human Factor		Public		Planned ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
325 MOLALLA-MARQUAM	25	4,688	18	353	5	289							7	4,335	24	26
326 MOLALLA-YODER	11	307	9	163	3	6							2	143	32	81
327 MT ANGEL-EAST	9	148	8	59	3	12							1	89	22	240
328 MT ANGEL-WEST	25	1,239	20	69	7	25							5	1,170	75	507
329 MT PLEASANT-CLAIRMONT	8	814	4	604	1	1							4	210	15	83
330 MT PLEASANT-MT VIEW	8	28	5	11									3	17	13	19
331 MT PLEASANT-RIVERCREST	6	2,657	6	2,657											4	14
332 MT PLEASANT-SOUTH END	11	279	9	277	5	60							2	2	13	20
333 MULINO-NORTH	8	967	7	103					1	864					25	21
334 MULINO-SOUTH	12	2,605	7	501	2	29			1	2,044			4	60	18	64
335 MULTNOMAH-13176	4	385	4	385											41	356
336 MULTNOMAH-13177	15	2,839	8	1,063	1	11					1	480	6	1,296	14	414
337 MULTNOMAH-13181	9	590	9	590											16	546
338 MULTNOMAH-MULTNOMAH 13	11	1,063	9	126	2	14							2	937	5	8
339 MURRAYHILL-KINTON	2	89	1	84									1	5	2	6
340 MURRAYHILL-MURRAYHILL 13	2	16,929	2	16,929												
341 MURRAYHILL-REUSSER	4	145	3	4							1	141			7	8,590
342 MURRAYHILL-TEAL	4	776	4	776												
343 NEWBERG-CHEHALEM	26	1,256	21	662	9	399							5	594	57	111
344 NEWBERG-DUNDEE	18	385	16	364	12	265							2	22	34	1,630
345 NEWBERG-HOOVER PARK	2	10	2	10	1	9									6	62
346 NEWBERG-NORTH COLLEGE	8	9,467	8	9,467	3	4									6	7
347 NORTH MARION-CROSBY	15	2,431	12	592	2	54	1	1,568					2	271	8	76
348 NORTH MARION-FRONT																
349 NORTH MARION-HUBBARD	12	1,870	9	874	3	37	1	964			1	1	1	30	6	218
350 NORTH MARION-MCLAREN	14	441	10	138	1	12							4	303	16	18
351 NORTH PLAINS-MASON HILL	21	3,840	14	64	2	6					1	9	6	3,767	80	830
352 NORTH PLAINS-NORTH PLAINS 13	5	16	5	16											36	184
353 NORTHERN-11009	5	142	4	140									1	2	25	650
354 NORTHERN-11016	2	34	2	34	1	26									10	205
355 NORTHERN-11071	2	4	2	4	1	3									40	689
356 OAK GROVE-LAKE HARRIET																
357 OAK GROVE-WHITE WATER																
358 OAK HILLS-FIVE OAKS	4	50	4	50											4	28
359 OAK HILLS-GREENBRIER	1	889	1	889											7	15
360 OAK HILLS-OAK HILLS 13	6	122	5	45									1	77		

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2019 Outages by Cause System

Feeder Name	Total System		PGE Equipment		Cutout, Fuse, Arrestor ¹		Loss of Substation		Loss of Transmission		Human Factor		Public		Planned ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
361 OAK HILLS-SOMERSET	1	74	1	74												
362 OAK HILLS-WALKER	4	31	4	31											3	240
363 OREGON STEEL-OREGON STEEL 13																
364 ORENCO-231ST															3	154
365 ORENCO-AMBERGLEN																
366 ORENCO-BASELINE	9	9,250	8	9,247	3	20							1	4	19	113
367 ORENCO-ORENCO 13	1	3											1	3	7	3
368 ORENCO-PRIMATE	3	202	3	202											3	3
369 ORENCO-WILKINS																
370 ORIENT-BARLOW	17	132	15	128	3	20							2	4	21	89
371 ORIENT-ORIENT 13	13	112	12	91	4	32							1	21	27	91
372 ORIENT-OXBOW	12	1,517	11	437	1	32							1	1,080	23	38
373 OSWEGO-IRON MOUNTAIN	3	68	1	47							1	17	1	4	21	31
374 OSWEGO-MARYLHURST	10	670	10	670	2	29									34	1,154
375 OSWEGO-PALATINE	7	87	5	76	3	69					1	6	1	5	39	467
376 OSWEGO-STAFFORD	5	123	2	89									3	34	24	652
377 OXFORD-FAIRVIEW	12	1,596	10	1,590	3	322							2	6	10	53
378 OXFORD-LEE	5	70	5	70	3	46									4	108
379 OXFORD-MADRONA	3	147	2	124									1	23		
380 OXFORD-OXFORD 13	1	5	1	5											6	124
381 OXFORD-RURAL																
382 OXFORD-SHELTON	8	628	5	91	2	49							3	537	3	2
383 PELTON-ROUND BUTTE																
384 PENINSULA PARK-OCKLEY GREEN	6	138	3	5	2	3					1	1	2	133	9	180
385 PENINSULA PARK-PENINSULA PARK	4	20	4	20	3	17									16	1,814
386 PLEASANT VALLEY-BAXTER	3	10	3	10	1	1									11	28
387 PLEASANT VALLEY-CLATSOP	6	282	5	261	2	147							1	21	8	24
388 PLEASANT VALLEY-MOON	10	1,502	10	1,502											32	365
389 PLEASANT VALLEY-PLEASANT 13	12	166	5	107	2	6							7	59	31	227
390 PLEASANT VALLEY-SUN	11	235	6	196									5	39	61	342
391 PORTLAND WATER-PUMPING																
392 PORTSMOUTH-CARBIDE	12	8,096	6	74				1	6,373				5	1,648	32	580
393 PORTSMOUTH-DISPOSAL	1	16						1	16						1	1
394 PORTSMOUTH-WILLIS	11	10,455	7	2,023	1	10		1	6,692		1	1	2	1,739	20	247
395 PROGRESS-GREENBURG	4	427	3	417	1	19					1	10			5	11
396 PROGRESS-HALL															1	367

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2019 Outages by Cause System

Feeder Name	Total System		PGE Equipment		Cutout, Fuse, Arrestor ¹		Loss of Substation		Loss of Transmission		Human Factor		Public		Planned ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
397 PROGRESS-ROBINSON	5	1,779	2	449					1	8			2	1,322	2	829
398 PROGRESS-SAWYER	4	150	4	150											21	235
399 PROGRESS-WASHINGTON SQ #1																
400 PROGRESS-WASHINGTON SQ #2																
401 RALEIGH HILLS-DOGWOOD	6	485	5	482	1	281							1	3	11	186
402 RALEIGH HILLS-MONTCLAIR															3	86
403 RALEIGH HILLS-OLESON	9	478	8	114	1	1					1	363			6	117
404 RAMAPO-EMERALD	5	26	3	24	1	16							2	2	16	1,038
405 RAMAPO-GILBERT	5	19	2	14									3	6	2	24
406 RAMAPO-RAMAPO 13	16	14,518	11	378			1	665					4	13,475	9	32
407 REDLAND-HENRICI	17	2,708	11	259	2	7					2	6	4	2,443	80	135
408 REDLAND-REDLAND 13	20	376	14	189	4	17					2	13	4	174	122	6,563
409 REEDVILLE-AUGUSTA	8	1,174	8	1,174	2	1,007									12	317
410 REEDVILLE-BLANTON	10	7,952	7	217	1	9	1	7,725					2	10	11	253
411 REEDVILLE-HAZELDALE	13	10,307	8	545	1	4	1	7,285					4	2,476	15	242
412 REEDVILLE-INTEL #5																
413 REEDVILLE-TV	12	10,418	9	4,908			1	5,463					2	47	12	109
414 RIVERGATE SOUTH-11010																
415 RIVERGATE SOUTH-11011	6	74	4	68	1	50					1	4	1	2	16	306
416 RIVERGATE SOUTH-PEARCY	4	79	4	79											3	2
417 RIVERGATE SOUTH-SWIFT	1	3									1	3				
418 RIVERVIEW-FULTON	5	286	1	6									4	280	13	94
419 RIVERVIEW-MACADAM	10	5,678	9	5,472									1	206	11	171
420 RIVERVIEW-TERWILLIGER	4	832	3	66									1	766	4	74
421 ROCKWOOD-AIRPORT																
422 ROCKWOOD-BOEING																
423 ROCKWOOD-INDUSTRIAL															1	2
424 ROCKWOOD-REYNOLDS	7	486	4	353									3	133	5	23
425 ROCKWOOD-ROCKWOOD 13	19	4,612	13	700	3	6					1	3,765	5	147	11	132
426 ROCKWOOD-WILKES															1	0
427 ROSEMONT-HIDDEN SPRINGS	5	30	5	30											16	16
428 ROSEMONT-MOSSY BRAE	3	28	3	28											15	17
429 ROSEMONT-OVERLOOK	9	637	6	626									3	12	16	279
430 ROSEWAY-ALEXANDER															7	119
431 ROSEWAY-ESPLANADE	3	55	3	55											21	183
432 ROSEWAY-ROSEWAY 13	4	34	3	31	1	4							1	3	4	2,488

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2019 Outages by Cause System

Feeder Name	Total System		PGE Equipment		Cutout, Fuse, Arrestor ¹		Loss of Substation		Loss of Transmission		Human Factor		Public		Planned ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
433 RUBY-CARLINE	9	390	7	351	1	51							2	40	25	726
434 RUBY-JUNCTION	15	12,739	12	12,726	1	2					1	7	2	6	26	119
435 SALEM-13260															1	5
436 SALEM-13261																
437 SALEM-13262															2	106
438 SALEM-13263																
439 SALEM-13264																
440 SALEM-UNION															2	5
441 SANDY-362ND	8	1,142	5	244	2	229							3	898	55	465
442 SANDY-BLUFF	13	138	10	133	2	18							3	6	27	1,407
443 SANDY-SANDY 13	20	5,125	16	4,942	3	55					2	10	2	173	41	8,289
444 SANDY-WILDCAT	15	372	12	353	2	43							3	20	50	216
445 SCAPPOOSE-SAUVIE ISLAND	1	2	1	2												
446 SCHOLLS FERRY-KEMMER	3	2,398	1	5							1	2,388	1	5	16	17,180
447 SCHOLLS FERRY-RAINBOW	29	12,453	21	610	6	42	1	2,639					7	9,204	22	105
448 SCHOLLS FERRY-ROY ROGERS	6	8,397	3	17			2	7,908					1	472	35	1,681
449 SCOGGINS-CHERRY GROVE	5	4,140	4	116	1	46							1	4,024	6	142
450 SCOGGINS-LAURELWOOD	18	290	17	271	6	165							1	20	33	25
451 SCOTTS MILLS-SCOTTS MILLS 13	28	6,362	23	224	8	129					2	1,177	3	4,961	117	1,184
452 SELLWOOD-KELLOGG PARK	10	29	9	28	1	4					1	1			4	34
453 SELLWOOD-SELLWOOD 13	14	308	11	207	1	2							3	100	16	70
454 SELLWOOD-WAVERLY	2	8	2	8	1	2									8	808
455 SHERIDAN-EAST	21	1,295	19	1,045	4	26							2	250	29	56
456 SHERIDAN-KADELL	14	783	11	345	2	2							3	438	29	710
457 SHUTE-LINDE 1 35KV																
458 SHUTE-RONLER 1															4	1,017
459 SHUTE-RONLER 2																
460 SILVERTON-NORTH	25	31,759	21	6,260	7	272	1	25,475					3	24	59	307
461 SILVERTON-SOUTH	20	24,370	16	377	5	36	1	23,825					3	167	64	741
462 SILVERTON-WEST	9	954	9	954	4	15									16	43
463 SIX CORNERS-13359	9	5,545	9	5,545	2	5,386									42	218
464 SIX CORNERS-13360	3	104	2	98									1	6	13	63
465 SIX CORNERS-BORCHERS	9	8,580	5	109	2	76							4	8,471	35	139
466 SIX CORNERS-CHAPMAN	9	194	8	192									1	2	24	243
467 SIX CORNERS-SIX CORNERS 13	5	64	4	62									1	2	23	160
468 SP NEWSPRINT-NEWBERG																

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2019 Outages by Cause System

Feeder Name	Total System		PGE Equipment		Cutout, Fuse, Arrestor ¹		Loss of Substation		Loss of Transmission		Human Factor		Public		Planned ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
469	SPRING HILL-SPRING HILL															
470	SPRINGBROOK-FERNWOOD	16	12,485	11	635	4	300	1	3,486				4	8,364	4	7
471	SPRINGBROOK-ST PAUL	16	6,298	9	2,760	4	17	1	1,594				6	1,943	18	40
472	SPRINGBROOK-VILLA	2	982					1	980				1	2	1	4
473	SPRINGBROOK-ZIMRI	16	3,241	14	782	6	174	1	2,458				1	1	22	88
474	ST HELENS-KASTER														2	159
475	ST LOUIS-EAST	5	134	3	130	1	15						2	4		
476	ST LOUIS-NORTH	20	3,260	10	87	4	36						10	3,174	57	124
477	ST LOUIS-WEST	21	274	17	222	2	12						4	52	6	10
478	ST MARYS EAST-BETHANY														2	13
479	ST MARYS EAST-ELMONICA	5	266	5	266										4	30
480	ST MARYS EAST-JENKINS															
481	ST MARYS EAST-MILLIKAN	2	422	2	422										1	1
482	ST MARYS EAST-ST MARYS 13															
483	STEPHENS-11001	1	29										1	29	9	40
484	STEPHENS-11020	1	7	1	7										8	140
485	STEPHENS-11054 NETWORK														1	35
486	STEPHENS-11055 NETWORK														1	23
487	STEPHENS-11092 NETWORK															
488	STEPHENS-11093 NETWORK														2	183
489	STEPHENS-11094 NETWORK														1	31
490	STEPHENS-11095 NETWORK														1	180
491	STEPHENS-11097 NETWORK														1	1,261
492	STEPHENS-11098	1	2											1	2	
493	STEPHENS-11099 NETWORK														1	376
494	STIMSON LUMBER-FORESTEX															
495	SULLIVAN-ROBINWOOD	6	342	5	336	1	7						1	6	34	617
496	SULLIVAN-SALAMO	2	3	2	3										12	37
497	SULLIVAN-SUSSEX	2	4	1	3	1	3						1	1	5	33
498	SULLIVAN-TANNER														3	48
499	SULLIVAN-WILLAMETTE	4	43	4	43	1	11								26	50
500	SULZER PUMPS-115B															
501	SUMMIT-GOVERNMENT CAMP	5	11	4	9						1	1			2	5
502	SUMMIT-MEADOWS	2	238	2	238										1	0
503	SUMMIT-SUMMIT 13	3	10	2	7								1	3		
504	SUNSET-BLANCHET														2	621

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	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	
505	SUNSET-COLFAX																
506	SUNSET-CORNELL																
507	SUNSET-DORION																
508	SUNSET-IDTB																
509	SUNSET-IDTC																
510	SUNSET-INTEL D1B1																
511	SUNSET-INTEL D1X1														1	26	
512	SUNSET-KOMATSU #1																
513	SUNSET-LANE																
514	SUNSET-MCCALL														2	484	
515	SUNSET-MEEK														1	3	
516	SUNSET-NIXON																
517	SUNSET-PAULING														1	1	
518	SUNSET-SPALDING														2	7	
519	SUNSET-WHITMAN																
520	SUNSET-YOUNG														2	621	
521	SWAN ISLAND-BASIN	1	7	1	7	1	7								2	2	
522	SWAN ISLAND-DOLPHIN	1	63	1	63										4	8	
523	SWAN ISLAND-FREIGHTLINER																
524	SWAN ISLAND-GOING														1	4	
525	SWAN ISLAND-SHIPYARD																
526	SYLVAN-BARNES	3	19	3	19										32	208	
527	SYLVAN-PATTON	17	1,438	15	1,433	3	23						2	5	32	823	
528	TABOR-82ND	6	1,332	5	373	1	4						1	959	19	390	
529	TABOR-HOSPITAL														5	455	
530	TABOR-TABOR 13	7	103	7	103	1	77								38	2,195	
531	TEKTRONIX-DUCKS																
532	TEKTRONIX-HOCKEN	3	31	3	31										2	10	
533	TEKTRONIX-MEADOW	10	1,364	7	1,352	2	299				1	3	2	8	11	420	
534	TEKTRONIX-NORTH																
535	TEKTRONIX-SHANNON	11	2,818	8	577	1	55							3	2,241	34	1,525
536	TEKTRONIX-SOUTH	11	4,940	9	749									2	4,191	8	48
537	TEKTRONIX-TEKTRONIX 13	1	40	1	40										5	27	
538	TEKTRONIX-TERMAN																
539	TEKTRONIX-WEST																
540	TEMP B-NORTH														2	10	

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2019 Outages by Cause System

Feeder Name	Total System		PGE Equipment		Cutout, Fuse, Arrestor ¹		Loss of Substation		Loss of Transmission		Human Factor		Public		Planned ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
541	TEMP B-SOUTH															
542	TIGARD-13336	5	380	1	4								4	376	8	423
543	TIGARD-13337	4	383	3	373								1	10	4	21
544	TIGARD-13361															
545	TIGARD-13362	11	1,247	11	1,247										3	32
546	TIGARD-TIGARD 13	8	2,669	5	2,643	1	2,439						3	26	19	198
547	TOWN CENTER-LAWNFIELD	6	355	3	56						1	297	2	2	3	20
548	TOWN CENTER-MONTEREY	4	349	4	349										1	1
549	TOWN CENTER-NORTH															
550	TOWN CENTER-PRECISION CASTPARTS															
551	TOWN CENTER-SOUTH															
552	TOWN CENTER-SUNNYBROOK	6	3,148	5	3,107								1	41	2	110
553	TOWN CENTER-VALLEY VIEW	5	942	5	942											
554	TROJAN-EAST														2	1
555	TUALATIN-AVERY	19	946	14	933								5	13	3	21
556	TUALATIN-CIPOLE	1	34	1	34											
557	TUALATIN-HERMAN	2	9	2	9										5	122
558	TUALATIN-IBACH	4	59	2	41								2	18	4	37
559	TUALATIN-LEVETON														1	12
560	TUALATIN-TUALATIN 13	2	6										2	6	2	9
561	TURNER-CASCADE	8	71	6	61	3	15				1	4	1	6	37	78
562	TURNER-TURNER 13	7	279	4	272	2	269						3	7	61	299
563	TWILIGHT-BREMER	22	211	18	206	2	4						4	5	20	25
564	UNIONVALE-UNIONVALE 13	16	3,474	15	975	10	949			1	2,500				15	35
565	UNIVERSITY-MILL	5	1,663	5	1,663										2	144
566	UNIVERSITY-TRADE	7	242	6	31								1	212	8	94
567	URBAN-BARBUR	2	438	1	134	1	134	1	303						4	861
568	URBAN-CAMPUS	3	165	2	91								1	75		
569	URBAN-CORBETT														5	47
570	URBAN-GAINES	6	1,004	6	1,004										2	3
571	URBAN-GIBBS	6	944	2	26			1	225				3	693	4	343,412
572	URBAN-KELLY	2	660	1	59			1	601						2	8
573	URBAN-LANDING	1	395					1	395							
574	URBAN-MEDICAL	1	29										1	29		
575	URBAN-OHSU															
576	WACKER-WACKER 1															

¹ Values captured in the PGE Equipment total

² Planned is not included as part of Total System values

Outs = Outages
Hrs = # of customers * duration hrs

2019 Outages by Cause System

Feeder Name	Total System		PGE Equipment		Cutout, Fuse, Arrestor ¹		Loss of Substation		Loss of Transmission		Human Factor		Public		Planned ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
577 WACONDA-NORPAC	2	17	2	17												
578 WACONDA-RIVER	11	539	10	275	3	183							1	264	8	22
579 WACONDA-WACONDA 13	24	6,820	22	3,994	9	1,095							2	2,825	59	710
580 WALLACE-WALLACE 13	17	3,011	12	779	5	376					1	3	4	2,229	83	317
581 WALLACE-WILLOW LAKE	4	22	1	0									3	22	1	6
582 WELCHES-WELCHES 13	7	1,121	6	1,065	6	1,065							1	55	25	113
583 WELCHES-ZIG ZAG	24	1,004	18	883	2	16					1	2	5	119	18	72
584 WEST PORTLAND-72ND	3	55	3	55											12	1,384
585 WEST PORTLAND-NORTH	10	347	9	345	3	65							1	2	28	334
586 WEST PORTLAND-PACIFIC	6	354	6	354											20	178
587 WEST PORTLAND-WEST PORTLAND 13	8	2,804	7	109	1	1					1	2,695			4	22
588 WEST UNION-ALOCLEK																
589 WEST UNION-CORNELIUS PASS	7	2,909	5	2,904	1	2							2	5	31	170
590 WEST UNION-JACOBSON	1	4											1	4	4	19
591 WEST UNION-WEST UNION 13	7	469	5	335									2	134	58	844
592 WILLAMINA-BRIDGE	13	1,125	8	474	4	10							5	650	17	76
593 WILLAMINA-BUELL	16	3,847	13	1,585	5	14							3	2,262	20	46
594 WILLAMINA-LUMBER															1	31
595 WILLBRIDGE-WILLBRIDGE #1	1	9	1	9											9	12
596 WILLBRIDGE-WILLBRIDGE #4															6	14
597 WILSONVILLE-BOECKMAN	6	138	5	131									1	8	19	36
598 WILSONVILLE-CHARBONNEAU	11	8,066	6	390	2	10							5	7,676	10	35
599 WILSONVILLE-CITY	3	256	2	2									1	255		
600 WILSONVILLE-MENTORTEK																
601 WILSONVILLE-PARKWAY	1	2											1	2		
602 WILSONVILLE-VILLEBOIS	4	1,115	1	1	1	1							3	1,114	7	32
603 WILSONVILLE-WEST	6	91	5	83	1	5							1	9	6	7
604 WOODBURN-CANNERY	12	4,820	7	246	4	185							5	4,574	4	189
605 WOODBURN-EAST	8	107	7	106	1	81					1	2			6	18
606 WOODBURN-TOMLIN	17	978	11	493	1	3							6	485	9	50
607 WOODBURN-WEST	8	11,254	5	97									3	11,156	9	89
608 YAMHILL-CARLTON	23	1,189	18	355	6	13							5	834	29	104
609 YAMHILL-YAMHILL 13	25	495	22	176	6	47							3	320	19	260
Grand Totals:	3,945	750,022	3,098	271,165	617	29,862	44	145,199	10	33,245	65	11,689	728	288,724	9,549	585,955

¹ Values captured in the PGE Equipment total

² Planned is not included as part of Total System values

Outs = Outages

Hrs = # of customers * duration hrs

Section VI

Outages by Cause PGE Equipment

This section provides the number of customer outages (frequency) and customer outage hours (duration) caused by PGE equipment events. The information is presented by feeder and attributed to one of the following causes:

- Total PGE Equipment – This category is the sum of the following categories¹:
 - Underground Conductor
 - Primary Device
 - Underground Accessory
 - Transformer
 - Overhead Conductor
 - Overhead Hardware
 - Cutout, Fuse, Arrestor
 - Meter
 - Pole
- Substation Equipment – This category is included for reference, but is not included in the Total PGE Equipment. Outages related to this category are included in the Loss of Substation column in Section V.

NOTES:

- Idle feeders are not included in this list
- Feeders may be omitted if they are a part of an alternate/multiple feeder service

¹ See Section IX – Cause Code Categories and Mapping for detailed causes for each category

2019 Outages by Cause PGE Equipment ¹

Feeder Name	Total PGE Equipment		UG Conductor		Primary Device		UG Accessory		Transformer		OH Conductor		OH Hardware		Cutout, Fuse, Arrestor		Meter		Pole		Substation ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
1 ABERNETHY-CLACKAMAS HEIGHTS	1	24							1	24												
2 ABERNETHY-OREGON CITY	3	11	1	2					1	5					1	5						
3 ABERNETHY-TRANSIT	4	19									2	9	2	10								
4 ABERNETHY-WASHINGTON	2	23	1	13											1	9						
5 ALDER-ANKENY	1	2											1	2								
6 ALDER-IRVING	8	482							2	428	1	14	3	8	2	32						
7 ALDER-LINCOLN	4	5,495									3	5,493	1	2								
8 ALDER-STARK	1	1						1	1													
9 ALDER-TAYLOR	9	67	1	3				1	2		2	34	2	3	2	22	1	4				
10 ALDER-YAMHILL	5	62									3	6	1	6	1	50						
11 AMITY-AMITY 13	15	3,803	1	9					1	7	2	4	6	3,667	5	117						
12 AMITY-BELLEVUE	19	584							1	7	3	6	3	539	12	32						
13 ARLETA-52ND	19	1,033	3	245							1	1	12	774	2	10	1	2				
14 ARLETA-FOSTER	4	12	1	1							2	11	1	1								
15 ARLETA-HAROLD	5	175									3	165	2	10								
16 ARLETA-POWELL	5	63	1	6									3	22	1	35						
17 ARLETA-STEELE	7	691	5	643									2	47								
18 BANKS-BANKS 13	9	102	4	79				1	2	2	8	1	12	1	1							
19 BANKS-CEDAR CANYON	12	309						2	6			5	116	3	179	2	8					
20 BARNES-BATTLE CREEK	4	386	2	102							1	1	1	282								
21 BARNES-BOONE	11	758	4	50				1	350	1	49			2	15	3	294					
22 BARNES-COMMERCIAL	10	789								1	16			3	719	6	54					
23 BARNES-SUNNYSIDE	6	302	5	301													1	1				
24 BEAVER-KB PIPELINE																						
25 BEAVERTON-ALLEN	8	189	3	169							1	1	3	17	1	2						
26 BEAVERTON-JAMIESON	2	1,408	2	1,408																		
27 BEAVERTON-NORTHWEST	1	111							1	111												
28 BEAVERTON-WEST SLOPE	10	451	2	51				1	1	3	330			1	64	1	1	2	4			
29 BELL-BATTIN	7	387							1	369	1	7	3	7	1	2	1	2				
30 BELL-BRENTWOOD	2	7											1	2	1	5						
31 BELL-FLAVEL	7	56	1	7					1	9	2	9	2	10	1	21						
32 BELL-JOHNSON CREEK																						
33 BELL-KENDALL	5	54									1	20	3	28	1	5						
34 BELL-KING																						
35 BELL-SOUTHGATE	6	488							1	220			4	28	1	239						
36 BELL-WICHITA	3	19											3	19								
37 BETHANY-BURTON	5	155						2	5	1	34			2	116							
38 BETHANY-GERMANTOWN	2	12						1	2							1	10					
39 BETHANY-KAISER	6	880	4	786					2	94												
40 BETHANY-LAIDLAW	3	12	2	12									1	1								

¹ See Section IX - Cause Code Categories for category definitions

² Substation Equipment failures are a part of the Loss of Substation System category; not included in Total PGE Equipment

Outs = Outages

Hrs = # of customers * duration hrs

2019 Outages by Cause PGE Equipment ¹

Feeder Name	Total PGE Equipment		UG Conductor		Primary Device		UG Accessory		Transformer		OH Conductor		OH Hardware		Cutout, Fuse, Arrestor		Meter		Pole		Substation ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
41 BETHANY-SPRINGVILLE	3	7	1	1			1	1							1	4						
42 BETHANY-THOMPSON	2	5	1	2											1	4						
43 BETHEL-FRUITLAND	16	228	5	58					2	76	2	4	2	2	5	88						
44 BETHEL-GEER	6	22	1	4					3	15	1	2					1	1				
45 BETHEL-MACLEAY	7	197	2	89					2	16	1	1			2	91						
46 BLUE LAKE-BLUE LAKE 13	5	657	1	208					2	151			1	296	1	2						
47 BLUE LAKE-SUNDIAL	4	15	3	13													1	2				
48 BLUE LAKE-TOYO TANSO																						
49 BOISE CASCADE-BOISE #1																						
50 BOONES FERRY-GOODALL	5	231	1	6					1	60			2	141	1	23						
51 BOONES FERRY-KRUSE	3	26					2	24			1	2										
52 BOONES FERRY-LAKE GROVE	9	540	2	456	1	4	1	9			1	1	3	5	1	65						
53 BOONES FERRY-MOUNTAIN PARK	5	417	5	417																		
54 BOONES FERRY-WEMBLEY PARK	9	3,464	4	266			1	4	1	17	1	3,170	2	6								
55 BORING-282ND	10	322	1	19			1	2	2	4	1	2	3	47	2	249						
56 BORING-CITY	12	1,009	4	59	1	35			1	5			4	782	2	129						
57 BORING-TELFORD	12	1,306	3	744					4	29	3	520	1	9	1	4					1	3,311
58 BRIGHTWOOD-BRIGHTWOOD 13	10	149	2	5			1	6	2	28			3	15	2	94						
59 BRIGHTWOOD-NORTH BANK	5	45					1	2	3	33					1	10						
60 BROOKWOOD-BORWICK	3	555	2	552			1	3														
61 BROOKWOOD-BROOKWOOD 13																						
62 BROOKWOOD-SUNRISE	2	228	1	219					1	10												
63 CANBY-13644	8	428							2	13			3	10	3	405						
64 CANBY-BUTTEVILLE	9	99	1	0			2	11	4	34					2	54						
65 CANBY-FILBERT																						
66 CANBY-ZIMMERMAN	11	62	1	3			1	6	3	29	1	2	4	20	1	2						
67 CANYON-13114 NETWORK #1																						
68 CANYON-13115 NETWORK #1																						
69 CANYON-13116 NETWORK #1																						
70 CANYON-13117 NETWORK #1																						
71 CANYON-13118 PSU																						
72 CANYON-13120																						
73 CANYON-13121																						
74 CANYON-13122 NETWORK #2																						
75 CANYON-13123 NETWORK #2																						
76 CANYON-13124 NETWORK #2																						
77 CANYON-13125 NETWORK #2																						
78 CANYON-13133 NETWORK #3																						
79 CANYON-13134 NETWORK #3																						
80 CANYON-13135 NETWORK #3																						

¹ See Section IX - Cause Code Categories for category definitions

Outs = Outages

² Substation Equipment failures are a part of the Loss of Substation System category;not included in Total PGE Equipment

Hrs = # of customers * duration hrs

2019 Outages by Cause PGE Equipment ¹

Feeder Name	Total PGE Equipment		UG Conductor		Primary Device		UG Accessory		Transformer		OH Conductor		OH Hardware		Cutout, Fuse, Arrestor		Meter		Pole		Substation ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
81 CANYON-13136 NETWORK #3																						
82 CANYON-21ST	1	8,643	1	8,643																		
83 CANYON-23RD	4	40											3	9	1	31						
84 CANYON-BURNSIDE	3	371							1	367			2	5								
85 CANYON-CANYON 13	3	12	1	3							1	8	1	2								
86 CARVER-ALMOND	2	323	1	161											1	162						
87 CARVER-CARVER 13	16	592	6	347			2	6	2	30			3	10	3	199						
88 CARVER-NORTH	1	453							1	453												
89 CARVER-RIVERBEND																						
90 CARVER-SOUTH																						
91 CARVER-WOODS	6	12	1	1			1	2	1	3			2	4	1	1						
92 CEDAR HILLS-CEDAR HILLS 13																						
93 CEDAR HILLS-LEAHY	8	491	5	459					1	2	1	4			1	26						
94 CEDAR HILLS-SHOPPING CENTER	8	264	3	84					2	105	1	29	1	15	1	30						
95 CEDAR HILLS-SKYLINE																						
96 CEDAR HILLS-ST VINCENT																						
97 CEDAR HILLS-SYLVAN	13	941	6	403					3	76	1	4	1	453	1	4			1	2		
98 CENTENNIAL-BARKER	17	780	3	197			2	182	1	58			6	107	5	237						
99 CENTENNIAL-BRAECROFT	5	136	2	57									1	3	2	76						
100 CENTENNIAL-CENTENNIAL 13	11	96	4	49							1	25	6	22								
101 CENTENNIAL-TREELAND	7	79	2	5			1	19	1	21			1	1	2	33						
102 CLACKAMAS-EVELYN																					1	63
103 CLACKAMAS-GLADSTONE	13	557	4	100			1	18			3	120	2	4	3	315					1	695
104 CLACKAMAS-JENNIFER	2	3	1	2											1	1					1	193
105 CLACKAMAS-TOLBERT	12	563	8	545									2	2	2	16					1	450
106 CLAXTAR-CLAXTAR 13	3	3	1	0									1	1	1	2						
107 CLAXTAR-HAYESVILLE	7	407	1	206									1	1	5	201						
108 CLAXTAR-RIDGE	6	471	2	7			4	464														
109 COFFEE CREEK-FREEMAN	1	8							1	8												
110 COFFEE CREEK-HOLIDAY	2	8	1	6			1	3														
111 COLTON-DHOOGHE	4	5											3	3	1	2						
112 COLTON-GRAYS HILL	11	1,066	2	123			1	1	1	8			5	864	2	70						
113 CORNELIUS-ADAIR	7	283	1	8			1	3					2	19	3	253						
114 CORNELIUS-CORNELIUS 13	15	887	1	605			3	158	1	3	2	10	6	87	2	24						
115 CORNELIUS-VERBOORT	7	461	2	435					2	17			3	9								
116 CORNELL-BLUFFS	6	402	2	101			1	289					3	12								
117 CORNELL-SALTZMAN	3	708	1	193			1	108	1	408												
118 CORNELL-WESTLAWN	4	122	2	120									2	3								
119 CULVER-GAFFIN	2	21					1	19	1	2												
120 CULVER-SANYO #1																						

¹ See Section IX - Cause Code Categories for category definitions

² Substation Equipment failures are a part of the Loss of Substation System category; not included in Total PGE Equipment

Outs = Outages

Hrs = # of customers * duration hrs

2019 Outages by Cause PGE Equipment ¹

Feeder Name	Total PGE Equipment		UG Conductor		Primary Device		UG Accessory		Transformer		OH Conductor		OH Hardware		Cutout, Fuse, Arrestor		Meter		Pole		Substation ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
121	CURTIS-11077																					
122	CURTIS-CURTIS 13	3	121										2	36	1	85						
123	DAYTON-EAST	13	196	2	4						2	164	1	1	7	25	1	2				
124	DAYTON-LAFAYETTE	11	892						1	3	3	546			7	343						
125	DAYTON-SOUTHWEST	15	1,724			1	1,149				1	2	7	414	6	159						
126	DELAWARE-DENVER	7	361						1	335	1	2	4	8	1	16						
127	DELAWARE-INTERSTATE	3	36						1	34			1	1	1	2						
128	DELAWARE-LOMBARD	8	85					1	3	1	53	3	4	3	24							
129	DENNY-EAST	5	252	2	11			1	4				1	1	1	236						
130	DENNY-NORTH	3	556	1	4			1	5						1	547						
131	DENNY-SOUTH	11	882	5	691			1	7	3	164		1	17			1	2				
132	DENNY-WEST	7	1,340	1	240			1	177			2	10	3	913							
133	DILLEY-DILLEY 13	6	38							2	29			3	6	1	3					
134	DILLEY-SPRINGHILL																					
135	DUNNS CORNER-DUNNS CORNER 13	13	247	2	105			1	6	3	108	2	10	3	12	2	5					
136	DUNNS CORNER-KELSO	3	11									1	2	1	6	1	3					
137	DURHAM-BONITA	1	2	1	2																	
138	DURHAM-BRIDGEPORT	1	54							1	54											
139	DURHAM-DURHAM 13	2	129					1	124					1	6							
140	DURHAM-POOPLANT																					
141	DURHAM-SATTLER	7	3,891	2	763			2	2,996					3	132							
142	DURHAM-SOUTH	5	210	4	132			1	78													
143	E-11021	1	11													1	11					
144	E-11039																					
145	E-11040	2	357	1	354											1	3					
146	E-11041	3	28							1	13					2	15					
147	E-11042																					
148	E-11043																					
149	E-11047	5	85	2	23						1	58	2	4								
150	E-11064	1	3								1	3										
151	E-13139																					
152	E-13140																					
153	E-13141																					
154	E-13142																					
155	E-13144	1	363							1	363											
156	E-13145																					
157	E-13148																					
158	E-13149	3	2,530	3	2,530																	
159	E-13150	4	11								1	2	1	2	2	7						
160	EAGLE CREEK-BARTON	7	28	1	4					2	9	1	2	1	0	2	13					

¹ See Section IX - Cause Code Categories for category definitions

Outs = Outages

² Substation Equipment failures are a part of the Loss of Substation System category; not included in Total PGE Equipment

Hrs = # of customers * duration hrs

2019 Outages by Cause PGE Equipment ¹

Feeder Name	Total PGE Equipment		UG Conductor		Primary Device		UG Accessory		Transformer		OH Conductor		OH Hardware		Cutout, Fuse, Arrestor		Meter		Pole		Substation ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
161	EAGLE CREEK-RIVER MILL	2	7											2	7							
162	EASTPORT-76TH	6	229									1	1	2	55	2	171	1	1			
163	EASTPORT-PLAZA	2	575						1	574				1	2							
164	ELMA-ELMA 13	4	122	2	60			1	61					1	1							
165	ELMA-FOUR CORNERS	9	1,377	7	1,333						1	34				1	10					
166	ELMA-HUDSON	7	587	2	352			1	197	1	16	1	2	1	19	1	1					
167	ELMA-STATE	2	73	2	73																	
168	ESTACADA-ESTACADA 13	5	76							1	13			2	7	2	56					
169	ESTACADA-FARADAY	11	771	3	117					4	26			3	624	1	3					
170	ESTACADA-NORTH FORK	25	144	4	21			1	6	4	42	3	22	9	34	4	19					
171	FAIRMOUNT-CANDALARIA	9	994	3	444					1	63	1	2	3	10	1	475					
172	FAIRMOUNT-MISSION	9	783	1	29			1	546			1	24	2	55	4	130					
173	FAIRVIEW-CLEAR CREEK																					
174	FAIRVIEW-FAIRVIEW 13	1	3	1	3																	
175	FAIRVIEW-KENNEL CLUB	5	194	2	178					1	8	1	5	1	4							
176	FAIRVIEW-TROUTDALE	6	268	4	263									2	5							
177	FAIRVIEW-WOOD VILLAGE	3	24	2	10							1	14									
178	FARGO-FARGO 13	21	1,514	8	1,133					1	33	2	276	8	43	2	30					
179	GALES CREEK-GALES CREEK 13	11	117									4	55	3	6	4	56					
180	GARDEN HOME-MCKAY	6	203					1	2					2	3	3	198					
181	GARDEN HOME-METZGER	16	827	3	95					2	12	2	3	3	217	5	498			1	1	
182	GLENCOE-GLISAN	5	55									2	4	3	50							
183	GLENCOE-PROVIDENCE	3	107	1	104							1	0	1	2							
184	GLENCOE-SUNNYSIDE	3	38									1	28	1	3	1	7					
185	GLENCULLEN-BRIDLEMILE	13	477	6	399					1	60	1	5			4	12	1	1			
186	GLENCULLEN-SUNSET	3	342	1	333							2	9									
187	GLENDOVEER-13596	3	20					1	2					1	11	1	6					
188	GLENDOVEER-13597	5	171					1	156					3	13	1	2					
189	GLENDOVEER-13598	6	243	1	10					1	201	1	5	2	14	1	12					
190	GLENDOVEER-13599	8	531	7	476											1	55					
191	GLENDOVEER-CLIFFGATE	18	828	6	471					6	291			4	38	2	28					
192	GLENDOVEER-NORTHEAST	3	91							1	24	1	0			1	67					
193	GLISAN-FAB 2A																					
194	GLISAN-UTILITY 1B																					
195	GORMLEY-MCMINNVILLE WL																					
196	GRAND RONDE-AGENCY	5	233							1	6			1	9	3	218					
197	GRAND RONDE-FORTHILL	3	81							1	14	1	1	1	66							
198	HARBORTON-BURLINGTON	19	2,087	4	82					3	19	2	5	8	1,974	1	4	1	2			
199	HARBORTON-LINNTON																					
200	HARMONY-HARMONY 13	4	261	1	8					2	146			1	106							

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2019 Outages by Cause PGE Equipment ¹

Feeder Name	Total PGE Equipment		UG Conductor		Primary Device		UG Accessory		Transformer		OH Conductor		OH Hardware		Cutout, Fuse, Arrestor		Meter		Pole		Substation ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
201	HARMONY-INTERNATIONAL	2	29	1	28			1	1													
202	HARMONY-LAKE	3	16							1	12	1	2	1	2							
203	HARMONY-LINWOOD	5	120									1	14	3	95	1	11					
204	HARMONY-MILWAUKIE	2	2									1	0	1	1							
205	HARMONY-THIESSEN	2	4	1	3									1	1							
206	HARRISON-DAVIS	2	34	1	24									1	10							
207	HARRISON-HARRISON 13	5	87									1	79	3	7	1	1					
208	HARRISON-IVON	1	3	1	3																	
209	HAYDEN ISLAND-MAINLAND	3	60									1	49	1	2			1	8			
210	HAYDEN ISLAND-NORTH SHORE	14	2,908	9	473			3	2,332	2	103											
211	HAYDEN ISLAND-SOUTH SHORE	4	246	3	230									1	16							
212	HEMLOCK-FREMONT	7	106	4	100							1	2	1	1	1	3					
213	HEMLOCK-HEMLOCK 13	7	679	4	354					2	324			1	1							
214	HEMLOCK-MASON	4	277							3	129					1	148					
215	HILLCREST-CASCADIA																					
216	HILLCREST-HILLCREST 13	4	59	1	10					1	44			1	2	1	4					
217	HILLCREST-SOUTH																					
218	HILLSBORO-DAIRY CREEK	16	743	3	4			2	562	1	14	1	8	4	12	5	143					
219	HILLSBORO-DENNIS	4	38	1	12							3	26									
220	HILLSBORO-JACKSON	9	533	4	519					1	8	1	2	1	1	2	3					
221	HILLSBORO-LAUREL	14	467	1	12					3	23	1	312	6	39	3	81					
222	HILLSBORO-SCHOLLS	5	1,272	3	1,236							1	6	1	31							
223	HOGAN NORTH-BRIGADOON	4	420	2	176			1	242								1	2				
224	HOGAN NORTH-HOGAN NORTH 13	14	433	5	94			2	88	3	155			1	2	3	94					
225	HOGAN NORTH-LINKS	14	905	11	802			2	102			1	1									
226	HOGAN NORTH-SALQUIST	7	145	3	131									2	2	2	11					
227	HOGAN SOUTH-CLEVELAND	7	203	2	181			2	8	1	5	1	6	1	3							
228	HOGAN SOUTH-LAWRENCE	16	552	13	527									2	23	1	2					
229	HOGAN SOUTH-MAIN	3	440	2	259												1	181				
230	HOGAN SOUTH-PAROPA	7	40	7	40																	
231	HOGAN SOUTH-WALLULA	6	247	2	204			1	12	1	19			1	6	1	7					
232	HOLGATE-BYBEE	7	36	2	6					2	11			2	15	1	4					
233	HOLGATE-GIDEON	2	4									1	1				1	2				
234	HOLGATE-HOLGATE 13	5	283							1	264	1	2	2	2	1	15					
235	HOLGATE-KENILWORTH	7	518	1	137					1	21			2	43	3	317					
236	HOLGATE-RHONE																					
237	HUBER-BANY	8	833	3	265			2	179	2	385					1	5					
238	HUBER-FARMINGTON	10	662	4	128			1	67	5	467											
239	HUBER-HUBER 13	4	2,450	2	1,136			1	326			1	988									
240	HUBER-KINNAMAN	13	394	5	139			2	152	1	12			2	79	3	11					

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Feeder Name	Total PGE Equipment		UG Conductor		Primary Device		UG Accessory		Transformer		OH Conductor		OH Hardware		Cutout, Fuse, Arrestor		Meter		Pole		Substation ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
241 HUBER-MARYVILLE	14	1,758	9	1,258					5	500												
242 INDIAN-KEIZER	9	467	2	401					1	14	2	5	3	37	1	11						
243 INDIAN-LABISH	17	481	1	2					5	94			3	3	8	382						
244 INDIAN-NORTH	19	313	6	227					2	5	3	25	4	8	4	48						
245 INDIAN-STATION	2	59	2	59																		
246 INDIAN-WEST	15	1,303	9	1,182			1	103							4	17	1	1				
247 ISLAND-13180	9	167	1	31					2	14	1	84	4	9	1	30						
248 ISLAND-13187	10	119							3	94	1	3	4	16	2	6						
249 ISLAND-13188	11	263	3	157							1	4	3	8	4	94						
250 ISLAND-ISLAND 13	1	5											1	5								
251 JENNINGS LODGE-ADDIE	10	219	3	89			2	7					2	3	3	119						
252 JENNINGS LODGE-JENNINGS 13	19	854	6	780			1	20	2	9	1	4	7	25	2	15						
253 JENNINGS LODGE-MELDRUM	4	318	1	289							1	2	2	28								
254 JENNINGS LODGE-OAK GROVE	2	11	1	6					1	5												
255 JENNINGS LODGE-WEBSTER	3	369	1	365					2	5												
256 KELLEY POINT-KELLEY POINT 13																						
257 KELLEY POINT-LEDBETTER																						
258 KELLEY POINT-MARINE	1	77	1	77																		
259 KELLEY POINT-SIMMONS																						
260 KELLY BUTTE-BINNSMEAD	3	82	1	75							1	3	1	4							1	616
261 KELLY BUTTE-FAIRLAWN	9	98					2	13					4	11	3	74						
262 KELLY BUTTE-MALL 205	9	169	1	12					1	106	1	1	5	22	1	28					1	1,246
263 KELLY BUTTE-MCGREW	14	415	2	39					5	258	4	99	2	7	1	12						
264 KING CITY-BULL MOUNTAIN																						
265 KING CITY-FISCHER	4	190	2	169									1	11	1	10						
266 KING CITY-HAZELBROOK	1	416	1	416																		
267 KING CITY-NORTH	6	387	4	252			1	69	1	67												
268 KING CITY-SUMMERFIELD																						
269 LAKE LABISH-LAKE LABISH																						
270 LELAND-BEAVERCREEK	17	205	6	157					1	7	3	2	4	22	3	15						
271 LELAND-CARUS	21	527	2	347					4	127	1	5	5	13	9	36						
272 LELAND-KELM	4	254	1	226					1	23			2	4								
273 LENTS-13101	8	1,129					1	1	2	29			2	15	3	1,085						
274 LENTS-HAPPY VALLEY	10	1,506	4	981			1	25	2	110					3	391						
275 LENTS-MT SCOTT	1	32													1	32						
276 LENTS-NORTH	3	54											2	49	1	5						
277 LIBERAL-LIBERAL 13	11	41	1	15							1	5	6	11	3	10						
278 LIBERAL-SAWMILL																						
279 LIBERTY-BROWNING	1	34													1	34					1	1,225
280 LIBERTY-LONE OAK	4	154	1	139					1	2			1	6	1	6					2	5,538

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Feeder Name	Total PGE Equipment		UG Conductor		Primary Device		UG Accessory		Transformer		OH Conductor		OH Hardware		Cutout, Fuse, Arrestor		Meter		Pole		Substation ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
281	LIBERTY-MORNINGSIDE	1	1							1	1										2	8,587
282	LIBERTY-ROSEDALE	18	637	9	552			2	5	1	58			4	5	2	16				1	970
283	LIBERTY-SKYLINE	13	292	6	269			1	1			2	11	2	3	2	9				2	7,663
284	LIBERTY-VISTA																				1	4,436
285	MAIN-AIRPORT	10	320	4	251					2	65			4	3							
286	MAIN-BENTLEY	7	445	5	255	1	3	1	186													
287	MAIN-EXPRESS	9	1,144	3	940					1	54	1	1	1	14	3	135					
288	MAIN-GRIFFIN OAKS																					
289	MAIN-JONES FARM																					
290	MAIN-RIVER	6	1,996	4	233	1	1,762							1	1							
291	MARKET-ENGLEWOOD	7	193	1	132					2	47	2	1	1	4	1	9					
292	MARKET-FAIRGROUNDS	13	177	3	106					2	33	2	5	4	7	2	26					
293	MARKET-HAWTHORNE	3	56													3	56					
294	MARKET-PARK	2	9											1	6	1	2					
295	MARQUAM-ORANGE	1	13					1	13													
296	MARQUAM-TILIKUM	1	833							1	833											
297	MAXIM-MAXIM 13																					
298	MCCLAIN-COTTAGE	5	417									2	4	2	7	1	406					
299	MCCLAIN-FRONT	3	209											1	185	2	24					
300	MCCLAIN-HOLLYWOOD	2	3									1	2	1	1							
301	MCGILL-HORSETAIL	6	2,167	2	16							1	4	2	2,146	1	2					
302	MCGILL-LATOURELL	2	333	1	13					1	320											
303	MERIDIAN-65TH	6	295	3	222					3	73											
304	MERIDIAN-BORLAND	1	3													1	3					
305	MERIDIAN-CHILDS	1	5	1	5																	
306	MERIDIAN-LAKEVIEW	3	13									1	3	2	10							
307	MERIDIAN-MERIDIAN 13	12	254					1	81	7	128			3	25	1	21					
308	MERIDIAN-NYBERG	1	10	1	10																	
309	MERIDIAN-PILKINGTON	14	477	8	420			3	51					2	3	1	2					
310	MERIDIAN-SAGERT	6	123	2	60			1	1	2	43					1	19					
311	MIDDLE GROVE-BROWN	7	13	2	6			1	1			2	4	1	1	1	1					
312	MIDDLE GROVE-CHEMEKETA	7	1,462	4	1,368					2	93					1	1					
313	MIDDLE GROVE-CORDON	15	235	5	76			1	8	2	105			3	24	3	21	1	1			
314	MIDDLE GROVE-SWEGLE	2	13	1	6									1	8							
315	MIDDLE GROVE-WEST	6	154	1	1							1	2	1	1	2	6			1	144	
316	MIDWAY-DIVISION	7	308	5	297									2	11							
317	MIDWAY-DOUGLAS	17	656	8	572			1	16			2	15	4	17	2	37					
318	MIDWAY-LYNCH	9	544	1	9							1	18	4	310	3	206					
319	MIDWAY-POWELLHURST	10	293	2	230					1	21	4	36	3	7							
320	MILL CREEK-EASTLAND	12	202	4	141			1	5			4	34	1	1	2	21					

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Feeder Name	Total PGE Equipment		UG Conductor		Primary Device		UG Accessory		Transformer		OH Conductor		OH Hardware		Cutout, Fuse, Arrestor		Meter		Pole		Substation ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
321 MILL CREEK-KUEBLER	5	987	4	598			1	389														
322 MILL CREEK-MILL CREEK 13	1	5							1	5												
323 MOLALLA-BUCKAROO	15	637	6	548					1	3			4	71	3	10			1	4		
324 MOLALLA-FOREST	10	1,423	2	365							1	2	3	5	2	8			2	1,044		
325 MOLALLA-MARQUAM	18	353	3	12			1	3			3	13	5	31	5	289			1	4		
326 MOLALLA-YODER	9	163	1	132					2	14			3	12	3	6						
327 MT ANGEL-EAST	8	59											5	46	3	12						
328 MT ANGEL-WEST	20	69	3	3					1	12	1	7	8	22	7	25						
329 MT PLEASANT-CLAIRMONT	4	604							1	204			2	398	1	1						
330 MT PLEASANT-MT VIEW	5	11	2	4							2	5	1	1								
331 MT PLEASANT-RIVERCREST	6	2,657					1	16			2	2,443	3	198								
332 MT PLEASANT-SOUTH END	9	277	1	146									3	71	5	60						
333 MULINO-NORTH	7	103	1	1			1	23					2	4					3	74		
334 MULINO-SOUTH	7	501							1	1			3	5	2	29			1	467		
335 MULTNOMAH-13176	4	385	2	381									2	4								
336 MULTNOMAH-13177	8	1,063	5	1,050									1	2	1	11	1	0				
337 MULTNOMAH-13181	9	590	3	20			4	553					1	17			1	1				
338 MULTNOMAH-MULTNOMAH 13	9	126	1	2			1	84			1	2	3	22	2	14	1	3				
339 MURRAYHILL-KINTON	1	84	1	84																		
340 MURRAYHILL-MURRAYHILL 13	2	16,929	2	16,929																		
341 MURRAYHILL-REUSSER	3	4	3	4																		
342 MURRAYHILL-TEAL	4	776	3	533			1	242														
343 NEWBERG-CHEHALEM	21	662	6	92			1	8					5	164	9	399						
344 NEWBERG-DUNDEE	16	364	3	88			1	11							12	265						
345 NEWBERG-HOOVER PARK	2	10											1	0	1	9						
346 NEWBERG-NORTH COLLEGE	8	9,467	1	13			1	9					2	9,433	3	4			1	9		
347 NORTH MARION-CROSBY	12	592	2	142					3	362			5	34	2	54					1	1,568
348 NORTH MARION-FRONT																						
349 NORTH MARION-HUBBARD	9	874	1	13			1	51	1	8			3	765	3	37					1	964
350 NORTH MARION-MCLAREN	10	138	2	27							2	16	5	83	1	12						
351 NORTH PLAINS-MASON HILL	14	64	2	26					4	11	1	2	5	19	2	6						
352 NORTH PLAINS-NORTH PLAINS 13	5	16	1	1							3	8	1	8								
353 NORTHERN-11009	4	140					1	132					3	8								
354 NORTHERN-11016	2	34											1	8	1	26						
355 NORTHERN-11071	2	4									1	1			1	3						
356 OAK GROVE-LAKE HARRIET																						
357 OAK GROVE-WHITE WATER																						
358 OAK HILLS-FIVE OAKS	4	50	2	46					1	2							1	2				
359 OAK HILLS-GREENBRIER	1	889			1	889																
360 OAK HILLS-OAK HILLS 13	5	45	2	1	1	4			1	38	1	2										

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	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
361 OAK HILLS-SOMERSET	1	74							1	74												
362 OAK HILLS-WALKER	4	31	1	12	1	15	1	1					1	3								
363 OREGON STEEL-OREGON STEEL 13																						
364 ORENCO-231ST																						
365 ORENCO-AMBERGLEN																						
366 ORENCO-BASELINE	8	9,247							1	8	2	9,211	2	7	3	20						
367 ORENCO-ORENCO 13																						
368 ORENCO-PRIMATE	3	202					1	4					2	198								
369 ORENCO-WILKINS																						
370 ORIENT-BARLOW	15	128	2	37					3	26	1	2	6	43	3	20						
371 ORIENT-ORIENT 13	12	91							4	24			4	35	4	32						
372 ORIENT-OXBOW	11	437	1	71					1	11	3	230	5	93	1	32						
373 OSWEGO-IRON MOUNTAIN	1	47											1	47								
374 OSWEGO-MARYLHURST	10	670					1	38	2	69			5	534	2	29						
375 OSWEGO-PALATINE	5	76					1	0	1	7					3	69						
376 OSWEGO-STAFFORD	2	89	2	89																		
377 OXFORD-FAIRVIEW	10	1,590	4	1,066			1	98			2	104			3	322						
378 OXFORD-LEE	5	70									1	13	1	10	3	46						
379 OXFORD-MADRONA	2	124	1	115									1	9								
380 OXFORD-OXFORD 13	1	5									1	5										
381 OXFORD-RURAL																						
382 OXFORD-SHELTON	5	91							2	40	1	1			2	49						
383 PELTON-ROUND BUTTE																						
384 PENINSULA PARK-OCKLEY GREEN	3	5									1	2			2	3						
385 PENINSULA PARK-PENINSULA PARK	4	20											1	3	3	17						
386 PLEASANT VALLEY-BAXTER	3	10	1	6							1	3			1	1						
387 PLEASANT VALLEY-CLATSOP	5	261	1	2					2	112					2	147						
388 PLEASANT VALLEY-MOON	10	1,502	5	1,326			1	16	2	64	2	96										
389 PLEASANT VALLEY-PLEASANT 13	5	107	1	65					2	36					2	6						
390 PLEASANT VALLEY-SUN	6	196	2	172							1	3	2	21			1	0				
391 PORTLAND WATER-PUMPING																						
392 PORTSMOUTH-CARBIDE	6	74					1	5			3	61	2	8								
393 PORTSMOUTH-DISPOSAL																						
394 PORTSMOUTH-WILLIS	7	2,023	3	2,004									3	9	1	10						
395 PROGRESS-GREENBURG	3	417											2	398	1	19						
396 PROGRESS-HALL																						
397 PROGRESS-ROBINSON	2	449	2	449																		
398 PROGRESS-SAWYER	4	150	2	117							1	25	1	9								
399 PROGRESS-WASHINGTON SQ #1																						
400 PROGRESS-WASHINGTON SQ #2																						

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Feeder Name	Total PGE Equipment		UG Conductor		Primary Device		UG Accessory		Transformer		OH Conductor		OH Hardware		Cutout, Fuse, Arrestor		Meter		Pole		Substation ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
401 RALEIGH HILLS-DOGWOOD	5	482	1	2					1	192			2	7	1	281						
402 RALEIGH HILLS-MONTCLAIR																						
403 RALEIGH HILLS-OLESON	8	114	3	81					1	18	2	13	1	2	1	1						
404 RAMAPO-EMERALD	3	24											2	8	1	16						
405 RAMAPO-GILBERT	2	14							1	13			1	1								
406 RAMAPO-RAMAPO 13	11	378	6	148					2	23	1	184	2	24							1	665
407 REDLAND-HENRICI	11	259	1	203			1	19	4	24	1	2	2	4	2	7						
408 REDLAND-REDLAND 13	14	189	4	154					2	9	1	0	3	9	4	17						
409 REEDVILLE-AUGUSTA	8	1,174	4	139					1	26	1	3			2	1,007						
410 REEDVILLE-BLANTON	7	217	3	43					1	155	1	3	1	7	1	9						
411 REEDVILLE-HAZELDALE	8	545	2	59			1	1	2	269	1	9			1	4			1	203		
412 REEDVILLE-INTEL #5																						
413 REEDVILLE-TV	9	4,908	6	592					2	56			1	4,259								
414 RIVERGATE SOUTH-11010																						
415 RIVERGATE SOUTH-11011	4	68									1	1	2	17	1	50						
416 RIVERGATE SOUTH-PEARCY	4	79											2	5					2	75		
417 RIVERGATE SOUTH-SWIFT																						
418 RIVERVIEW-FULTON	1	6											1	6								
419 RIVERVIEW-MACADAM	9	5,472	7	4,283							1	2	1	1,187								
420 RIVERVIEW-TERWILLIGER	3	66	2	34			1	32														
421 ROCKWOOD-AIRPORT																						
422 ROCKWOOD-BOEING																						
423 ROCKWOOD-INDUSTRIAL																						
424 ROCKWOOD-REYNOLDS	4	353	1	271									3	82								
425 ROCKWOOD-ROCKWOOD 13	13	700	4	125			4	21	2	548					3	6						
426 ROCKWOOD-WILKES																						
427 ROSEMONT-HIDDEN SPRINGS	5	30	3	23									2	7								
428 ROSEMONT-MOSSY BRAE	3	28			2	26							1	2								
429 ROSEMONT-OVERLOOK	6	626	3	6			1	618					2	2								
430 ROSEWAY-ALEXANDER																						
431 ROSEWAY-ESPLANADE	3	55	3	55																		
432 ROSEWAY-ROSEWAY 13	3	31	1	3			1	25							1	4						
433 RUBY-CARLINE	7	351	3	103					2	191			1	5	1	51						
434 RUBY-JUNCTION	12	12,726	10	12,603					1	121					1	2						
435 SALEM-13260																						
436 SALEM-13261																						
437 SALEM-13262																						
438 SALEM-13263																						
439 SALEM-13264																						
440 SALEM-UNION																						

¹ See Section IX - Cause Code Categories for category definitions

² Substation Equipment failures are a part of the Loss of Substation System category;not included in Total PGE Equipment

Outs = Outages

Hrs = # of customers * duration hrs

2019 Outages by Cause PGE Equipment ¹

Feeder Name	Total PGE Equipment		UG Conductor		Primary Device		UG Accessory		Transformer		OH Conductor		OH Hardware		Cutout, Fuse, Arrestor		Meter		Pole		Substation ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
441 SANDY-362ND	5	244	1	5					1	4			1	6	2	229						
442 SANDY-BLUFF	10	133	3	32					3	16	2	66			2	18						
443 SANDY-SANDY 13	16	4,942	2	53					3	18	1	3	7	4,814	3	55						
444 SANDY-WILDCAT	12	353	5	277			1	6	3	25			1	2	2	43						
445 SCAPPOOSE-SAUVIE ISLAND	1	2											1	2								
446 SCHOLLS FERRY-KEMMER	1	5					1	5														
447 SCHOLLS FERRY-RAINBOW	21	610	2	14	1	484	2	16	2	23	1	5	6	19	6	42			1	6	1	2,639
448 SCHOLLS FERRY-ROY ROGERS	3	17	2	5									1	12							2	7,908
449 SCOGGINS-CHERRY GROVE	4	116					1	2					2	67	1	46						
450 SCOGGINS-LAURELWOOD	17	271	3	68					1	2	2	6	4	23	6	165			1	7		
451 SCOTTS MILLS-SCOTTS MILLS 13	23	224	1	32			2	3			3	30	9	30	8	129						
452 SELLWOOD-KELLOGG PARK	9	28					1	8	1	6			6	11	1	4						
453 SELLWOOD-SELLWOOD 13	11	207	3	60							4	19	3	126	1	2						
454 SELLWOOD-WAVERLY	2	8											1	6	1	2						
455 SHERIDAN-EAST	19	1,045	7	137					2	26	1	1	5	854	4	26						
456 SHERIDAN-KADELL	11	345	1	13					1	97	3	214	4	19	2	2						
457 SHUTE-LINDE 1 35KV																						
458 SHUTE-RONLER 1																						
459 SHUTE-RONLER 2																						
460 SILVERTON-NORTH	21	6,260	5	56	1	5,904					3	6	5	21	7	272					1	25,475
461 SILVERTON-SOUTH	16	377					5	17			4	320	2	4	5	36					1	23,825
462 SILVERTON-WEST	9	954									1	686	4	253	4	15						
463 SIX CORNERS-13359	9	5,545	3	142									4	18	2	5,386						
464 SIX CORNERS-13360	2	98	1	65									1	33								
465 SIX CORNERS-BORCHERS	5	109					1	3					1	3	2	76			1	27		
466 SIX CORNERS-CHAPMAN	8	192	2	12			1	3	2	99	2	73	1	5								
467 SIX CORNERS-SIX CORNERS 13	4	62	2	60			1	1					1	1								
468 SP NEWSPRINT-NEWBERG																						
469 SPRING HILL-SPRING HILL																						
470 SPRINGBROOK-FERNWOOD	11	635	5	268					2	66					4	300						
471 SPRINGBROOK-ST PAUL	9	2,760	3	2,357							1	386	1	1	4	17						
472 SPRINGBROOK-VILLA																						
473 SPRINGBROOK-ZIMRI	14	782	4	96			1	109	3	403					6	174						
474 ST HELENS-KASTER																						
475 ST LOUIS-EAST	3	130	1	113							1	1			1	15						
476 ST LOUIS-NORTH	10	87	2	41			1	0	1	5			2	3	4	36						
477 ST LOUIS-WEST	17	222	3	29			1	3	2	19			8	158	2	12	1	2				
478 ST MARYS EAST-BETHANY																						
479 ST MARYS EAST-ELMONICA	5	266	4	175			1	91														
480 ST MARYS EAST-JENKINS																						

¹ See Section IX - Cause Code Categories for category definitions

² Substation Equipment failures are a part of the Loss of Substation System category; not included in Total PGE Equipment

Outs = Outages

Hrs = # of customers * duration hrs

2019 Outages by Cause PGE Equipment ¹

Feeder Name	Total PGE Equipment		UG Conductor		Primary Device		UG Accessory		Transformer		OH Conductor		OH Hardware		Cutout, Fuse, Arrestor		Meter		Pole		Substation ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
481	ST MARYS EAST-MILLIKAN	2	422	1	421			1	1													
482	ST MARYS EAST-ST MARYS 13																					
483	STEPHENS-11001																					
484	STEPHENS-11020	1	7										1	7								
485	STEPHENS-11054 NETWORK																					
486	STEPHENS-11055 NETWORK																					
487	STEPHENS-11092 NETWORK																					
488	STEPHENS-11093 NETWORK																					
489	STEPHENS-11094 NETWORK																					
490	STEPHENS-11095 NETWORK																					
491	STEPHENS-11097 NETWORK																					
492	STEPHENS-11098																					
493	STEPHENS-11099 NETWORK																					
494	STIMSON LUMBER-FORESTEX																					
495	SULLIVAN-ROBINWOOD	5	336	2	256					1	70			1	2	1	7					
496	SULLIVAN-SALAMO	2	3	1	2									1	2							
497	SULLIVAN-SUSSEX	1	3													1	3					
498	SULLIVAN-TANNER																					
499	SULLIVAN-WILLAMETTE	4	43	2	29					1	3					1	11					
500	SULZER PUMPS-115B																					
501	SUMMIT-GOVERNMENT CAMP	4	9									2	5	2	4							
502	SUMMIT-MEADOWS	2	238	1	237									1	1							
503	SUMMIT-SUMMIT 13	2	7							1	2			1	5							
504	SUNSET-BLANCHET																					
505	SUNSET-COLFAX																					
506	SUNSET-CORNELL																					
507	SUNSET-DORION																					
508	SUNSET-IDTB																					
509	SUNSET-IDTC																					
510	SUNSET-INTEL D1B1																					
511	SUNSET-INTEL D1X1																					
512	SUNSET-KOMATSU #1																					
513	SUNSET-LANE																					
514	SUNSET-MCCALL																					
515	SUNSET-MEEK																					
516	SUNSET-NIXON																					
517	SUNSET-PAULING																					
518	SUNSET-SPALDING																					
519	SUNSET-WHITMAN																					
520	SUNSET-YOUNG																					

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Outs = Outages

Hrs = # of customers * duration hrs

2019 Outages by Cause PGE Equipment ¹

Feeder Name	Total PGE Equipment		UG Conductor		Primary Device		UG Accessory		Transformer		OH Conductor		OH Hardware		Cutout, Fuse, Arrestor		Meter		Pole		Substation ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
521 SWAN ISLAND-BASIN	1	7													1	7						
522 SWAN ISLAND-DOLPHIN	1	63	1	63																		
523 SWAN ISLAND-FREIGHTLINER																						
524 SWAN ISLAND-GOING																						
525 SWAN ISLAND-SHIPYARD																						
526 SYLVAN-BARNES	3	19											3	19								
527 SYLVAN-PATTON	15	1,433	2	1					1	65	2	29	7	1,315	3	23						
528 TABOR-82ND	5	373	1	71							1	4	2	294	1	4						
529 TABOR-HOSPITAL																						
530 TABOR-TABOR 13	7	103						1	2			3	14	2	10	1	77					
531 TEKTRONIX-DUCKS																						
532 TEKTRONIX-HOCKEN	3	31	2	19				1	12													
533 TEKTRONIX-MEADOW	7	1,352	2	1,019							2	33	1	1	2	299						
534 TEKTRONIX-NORTH																						
535 TEKTRONIX-SHANNON	8	577	2	482							2	11	3	30	1	55						
536 TEKTRONIX-SOUTH	9	749	5	727									1	1			2	6	1	15		
537 TEKTRONIX-TEKTRONIX 13	1	40	1	40																		
538 TEKTRONIX-TERMAN																						
539 TEKTRONIX-WEST																						
540 TEMP B-NORTH																						
541 TEMP B-SOUTH																						
542 TIGARD-13336	1	4						1	4													
543 TIGARD-13337	3	373	3	373																		
544 TIGARD-13361																						
545 TIGARD-13362	11	1,247	4	343				1	112	5	773	1	18									
546 TIGARD-TIGARD 13	5	2,643	3	201						1	3				1	2,439						
547 TOWN CENTER-LAWNFIELD	3	56	1	6						1	49						1	2				
548 TOWN CENTER-MONTEREY	4	349	1	7						3	342											
549 TOWN CENTER-NORTH																						
550 TOWN CENTER-PRECISION CASTPARTS																						
551 TOWN CENTER-SOUTH																						
552 TOWN CENTER-SUNNYBROOK	5	3,107	3	425				1	945	1	1,737											
553 TOWN CENTER-VALLEY VIEW	5	942	1	559	1	282	1	61	2	41												
554 TROJAN-EAST																						
555 TUALATIN-AVERY	14	933	8	613				2	217	3	71						1	32				
556 TUALATIN-CIPOLE	1	34												1	34							
557 TUALATIN-HERMAN	2	9	2	9																		
558 TUALATIN-IBACH	2	41	1	34						1	7											
559 TUALATIN-LEVETON																						
560 TUALATIN-TUALATIN 13																						

¹ See Section IX - Cause Code Categories for category definitions

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² Substation Equipment failures are a part of the Loss of Substation System category; not included in Total PGE Equipment

Hrs = # of customers * duration hrs

2019 Outages by Cause PGE Equipment ¹

Feeder Name	Total PGE Equipment		UG Conductor		Primary Device		UG Accessory		Transformer		OH Conductor		OH Hardware		Cutout, Fuse, Arrestor		Meter		Pole		Substation ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
561 TURNER-CASCADE	6	61	2	42							1	4			3	15						
562 TURNER-TURNER 13	4	272											2	3	2	269						
563 TWILIGHT-BREMER	18	206	1	10			4	143	1	12	2	9	8	26	2	4						
564 UNIONVALE-UNIONVALE 13	15	975					1	8	1	10	1	5	2	3	10	949						
565 UNIVERSITY-MILL	5	1,663	4	1,642					1	21												
566 UNIVERSITY-TRADE	6	31									4	10	2	20								
567 URBAN-BARBUR	1	134													1	134						
568 URBAN-CAMPUS	2	91	1	24									1	66								
569 URBAN-CORBETT																						
570 URBAN-GAINES	6	1,004	2	309							2	686	2	8								
571 URBAN-GIBBS	2	26	2	26																		
572 URBAN-KELLY	1	59															1	59				
573 URBAN-LANDING																						
574 URBAN-MEDICAL																						
575 URBAN-OHSU																						
576 WACKER-WACKER 1																						
577 WACONDA-NORPAC	2	17									1	7	1	10								
578 WACONDA-RIVER	10	275	3	52					1	7			3	33	3	183						
579 WACONDA-WACONDA 13	22	3,994	1	183					2	17	4	2,653	6	46	9	1,095						
580 WALLACE-WALLACE 13	12	779	2	225					1	6	2	158	2	14	5	376						
581 WALLACE-WILLOW LAKE	1	0											1	0								
582 WELCHES-WELCHES 13	6	1,065													6	1,065						
583 WELCHES-ZIG ZAG	18	883							3	49	5	150	7	645	2	16			1	23		
584 WEST PORTLAND-72ND	3	55	1	17			1	36					1	1								
585 WEST PORTLAND-NORTH	9	345							3	275	1	0	2	4	3	65						
586 WEST PORTLAND-PACIFIC	6	354	1	26			1	2	3	323	1	3										
587 WEST PORTLAND-WEST PORTLAND 13	7	109					2	29	1	49	1	15	2	15	1	1						
588 WEST UNION-ALOCLEK																						
589 WEST UNION-CORNELIUS PASS	5	2,904							1	62	2	22	1	2,817	1	2						
590 WEST UNION-JACOBSON																						
591 WEST UNION-WEST UNION 13	5	335	4	334									1	2								
592 WILLAMINA-BRIDGE	8	474							3	463			1	1	4	10						
593 WILLAMINA-BUELL	13	1,585	1	4					3	15	3	1,550	1	1	5	14						
594 WILLAMINA-LUMBER																						
595 WILLBRIDGE-WILLBRIDGE #1	1	9											1	9								
596 WILLBRIDGE-WILLBRIDGE #4																						
597 WILSONVILLE-BOECKMAN	5	131	2	117			1	1	1	2			1	10								
598 WILSONVILLE-CHARBONNEAU	6	390	2	205								1	6	1	168	2	10					
599 WILSONVILLE-CITY	2	2	2	2																		
600 WILSONVILLE-MENTORTEK																						

¹ See Section IX - Cause Code Categories for category definitions

² Substation Equipment failures are a part of the Loss of Substation System category; not included in Total PGE Equipment

Outs = Outages

Hrs = # of customers * duration hrs

2019 Outages by Cause PGE Equipment ¹

Feeder Name	Total PGE Equipment		UG Conductor		Primary Device		UG Accessory		Transformer		OH Conductor		OH Hardware		Cutout, Fuse, Arrestor		Meter		Pole		Substation ²	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
601 WILSONVILLE-PARKWAY	1	1													1	1						
602 WILSONVILLE-VILLEBOIS	5	83	2	3			1	75					1	0	1	5						
603 WILSONVILLE-WEST	7	246											3	60	4	185						
604 WOODBURN-CANNERY	7	106	1	9							3	7	2	9	1	81						
605 WOODBURN-EAST	11	493	4	333			1	90	2	12			3	55	1	3						
606 WOODBURN-TOMLIN	5	97											5	97								
607 WOODBURN-WEST	18	355	4	261					3	67	1	6	3	7	6	13	1	2				
608 YAMHILL-CARLTON	22	176	6	67			1	10	2	17	2	3	4	30	6	47			1	1		
609 YAMHILL-YAMHILL 13																						
Grand Totals:	3,098	271,165	828	111,550	13	10,556	175	15,169	362	20,001	297	32,691	617	29,862	21	2,106	24	98,039	21	2,106	24	98,039

¹ See Section IX - Cause Code Categories for category definitions

Outs = Outages

² Substation Equipment failures are a part of the Loss of Substation System category; not included in Total PGE Equipment

Hrs = # of customers * duration hrs

Section VII

Outages by Cause Vegetation

This section provides the number of customer outages (frequency) and customer outage hours (duration) caused by vegetation events. The information is presented by feeder and attributed to one of three primary categories and one of three subcategories, if applicable, of vegetation related events. Definitions for the primary and sub-categories are shown below:

- Total Trees: Total number of vegetation (i.e. tree) related outages. This category is the sum of Non-Preventable and Preventable outages.
- Total Non-Preventable: Total number uprooted trees, tree limbs, and broken/felled trees that resulted in an outage.
 - Tree Uprooted: Outages caused by a whole tree uprooting. This does not include broken tree parts (e.g. limb or tree top)
 - Limb on Line: Outages caused by broken tree tops or limbs
- Total Preventable (Tree / Limb Burning): Total number of outages caused by a tree growing into the conductor. This also includes tree burning events.
- Felled Tree/Limb: This category is included for reference, but is not included in Total Trees. Outages related to this category are included in the Public column in section V.

NOTES:

- Idle feeders are not included in this list
- Feeders may be omitted if they are a part of an alternate/multiple feeder service

2019 Outages by Cause Vegetation

Feeder Name	Total Trees ¹		Total Preventable (Tree/Limb Burning)		Total Non-Preventable ²		Tree Uprooted		Limb on Line		Felled Tree/Limb ³	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
1 ABERNETHY-CLACKAMAS HEIGHTS	1	525			1	525			1	525		
2 ABERNETHY-OREGON CITY	8	2,766			8	2,766	3	1,561	5	1,204		
3 ABERNETHY-TRANSIT	3	1,320			3	1,320	1	2	2	1,318		
4 ABERNETHY-WASHINGTON	3	273			3	273	1	2	2	271		
5 ALDER-ANKENY	3	36			3	36			3	36		
6 ALDER-IRVING	1	1			1	1	1	1				
7 ALDER-LINCOLN	1	8	1	8								
8 ALDER-STARK												
9 ALDER-TAYLOR	2	21	1	18	1	3			1	3		
10 ALDER-YAMHILL	1	1,592			1	1,592			1	1,592		
11 AMITY-AMITY 13	12	1,068	2	830	10	238	4	89	6	149		
12 AMITY-BELLEVUE	11	1,140	1	4	10	1,136	2	640	8	495	1	37
13 ARLETA-52ND	1	43			1	43			1	43		
14 ARLETA-FOSTER												
15 ARLETA-HAROLD	1	4			1	4			1	4		
16 ARLETA-POWELL	1	5			1	5			1	5		
17 ARLETA-STEELE	2	21	1	0	1	20			1	20		
18 BANKS-BANKS 13	7	230			7	230	2	41	5	190		
19 BANKS-CEDAR CANYON	34	6,963	2	167	32	6,796	18	5,086	14	1,711		
20 BARNES-BATTLE CREEK	3	1,402	1	1,394	2	8	1	5	1	3		
21 BARNES-BOONE	4	325			4	325			4	325		
22 BARNES-COMMERCIAL	5	1,639	1	46	4	1,594	2	1,582	2	12		
23 BARNES-SUNNYSIDE	3	178	1	2	2	176	1	175	1	0		
24 BEAVER-KB PIPELINE												
25 BEAVERTON-ALLEN	2	3	1	2	1	1			1	1	1	1,148
26 BEAVERTON-JAMIESON												
27 BEAVERTON-NORTHWEST												
28 BEAVERTON-WEST SLOPE												
29 BELL-BATTIN	6	240	1	74	5	166			5	166		
30 BELL-BRENTWOOD												
31 BELL-FLAVEL												
32 BELL-JOHNSON CREEK												
33 BELL-KENDALL	3	477	1	474	2	3			2	3		
34 BELL-KING	3	1,979			3	1,979	1	1,622	2	357		
35 BELL-SOUTHGATE	3	628	1	126	2	501			2	501		
36 BELL-WICHITA	5	102	1	4	4	99	2	93	2	6		
37 BETHANY-BURTON												
38 BETHANY-GERMANTOWN	10	377			10	377	4	265	6	111		
39 BETHANY-KAISER	1	6,120			1	6,120			1	6,120		
40 BETHANY-LAIDLAW	1	1,045	1	1,045								

1-Total Trees = Total Prev. + Total Non-Prev.

2-Total Non-Prev. = Tree Uprooted + Limb on Line

3-Felled Tree/Limb events are included in the Public System category; not included in Total Trees

Outs = Outages

Hrs = # of customers * duration hrs

2019 Outages by Cause Vegetation

Feeder Name	Total Trees ¹		Total Preventable (Tree/Limb Burning)		Total Non-Preventable ²		Tree Uprooted		Limb on Line		Felled Tree/Limb ³	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
41 BETHANY-SPRINGVILLE	1	185			1	185			1	185		
42 BETHANY-THOMPSON												
43 BETHEL-FRUITLAND	3	6,663			3	6,663	3	6,663				
44 BETHEL-GEER	2	2,200			2	2,200	1	2,183	1	17		
45 BETHEL-MACLEAY	4	238			4	238	2	230	2	9		
46 BLUE LAKE-BLUE LAKE 13	2	2,214			2	2,214	2	2,214				
47 BLUE LAKE-SUNDIAL	1	103			1	103	1	103				
48 BLUE LAKE-TOYO TANSO												
49 BOISE CASCADE-BOISE #1												
50 BOONES FERRY-GOODALL	6	3,291	1	655	5	2,637	2	572	3	2,065		
51 BOONES FERRY-KRUSE												
52 BOONES FERRY-LAKE GROVE	2	57			2	57			2	57		
53 BOONES FERRY-MOUNTAIN PARK	1	2			1	2			1	2		
54 BOONES FERRY-WEMBLEY PARK	8	1,753	1	281	7	1,473			7	1,473	1	18
55 BORING-282ND	11	2,779			11	2,779	5	2,199	6	580		
56 BORING-CITY	7	508	2	38	5	470	1	42	4	427	1	104
57 BORING-TELFORD	11	1,182			11	1,182	7	742	4	440		
58 BRIGHTWOOD-BRIGHTWOOD 13	37	6,048	3	148	34	5,901	16	1,153	18	4,748	1	269
59 BRIGHTWOOD-NORTH BANK	9	365			9	365	4	168	5	197		
60 BROOKWOOD-BORWICK	1	2,929			1	2,929			1	2,929		
61 BROOKWOOD-BROOKWOOD 13												
62 BROOKWOOD-SUNRISE	2	4,092			2	4,092	1	2,831	1	1,261		
63 CANBY-13644	6	994			6	994	1	149	5	845		
64 CANBY-BUTTEVILLE												
65 CANBY-FILBERT												
66 CANBY-ZIMMERMAN	19	4,187	3	204	16	3,983	12	3,584	4	399		
67 CANYON-13114 NETWORK #1												
68 CANYON-13115 NETWORK #1												
69 CANYON-13116 NETWORK #1												
70 CANYON-13117 NETWORK #1												
71 CANYON-13118 PSU												
72 CANYON-13120												
73 CANYON-13121												
74 CANYON-13122 NETWORK #2												
75 CANYON-13123 NETWORK #2												
76 CANYON-13124 NETWORK #2												
77 CANYON-13125 NETWORK #2												
78 CANYON-13133 NETWORK #3												
79 CANYON-13134 NETWORK #3												
80 CANYON-13135 NETWORK #3												

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2019 Outages by Cause Vegetation

Feeder Name	Total Trees ¹		Total Preventable (Tree/Limb Burning)		Total Non-Preventable ²		Tree Uprooted		Limb on Line		Felled Tree/Limb ³	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
81	CANYON-13136 NETWORK #3											
82	CANYON-21ST											
83	5	979	1	0	4	978	3	978	1	1		
84	CANYON-BURNSIDE											
85	7	488			7	488	3	15	4	473		
86	CARVER-ALMOND											
87	1	6			1	6	1	6				
88	CARVER-NORTH											
89	CARVER-RIVERBEND											
90	CARVER-SOUTH											
91	18	1,737	1	62	17	1,675	3	11	14	1,664		
92	CEDAR HILLS-CEDAR HILLS 13											
93	7	5,809			7	5,809	4	5,657	3	152		
94	7	1,263			7	1,263	1	619	6	645		
95	CEDAR HILLS-SKYLINE											
96	CEDAR HILLS-ST VINCENT											
97	10	3,871			10	3,871	1	5	9	3,866		
98	2	153	1	2	1	151			1	151		
99	2	178	1	14	1	164			1	164		
100	3	578	2	575	1	3			1	3	1	2
101	3	2,159	1	2	2	2,157	1	3	1	2,155		
102	CLACKAMAS-EVELYN											
103	6	790			6	790	4	787	2	3		
104	CLACKAMAS-JENNIFER											
105	3	319	3	319								
106	3	447	2	155	1	292	1	292				
107	1	3,739			1	3,739	1	3,739				
108	CLAXTAR-RIDGE											
109	1	1,677			1	1,677			1	1,677		
110	COFFEE CREEK-HOLIDAY											
111	10	2,300	2	175	8	2,124	5	1,062	3	1,063	1	1
112	18	3,756	2	303	16	3,453	10	563	6	2,890	2	239
113	4	49			4	49	2	7	2	42		
114	4	562	1	402	3	160	2	15	1	145		
115	3	64			3	64			3	64		
116	CORNELL-BLUFFS											
117	1	126	1	126								
118	3	728			3	728			3	728		
119	CULVER-GAFFIN											
120	CULVER-SANYO #1											

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Feeder Name	Total Trees ¹		Total Preventable (Tree/Limb Burning)		Total Non-Preventable ²		Tree Uprooted		Limb on Line		Felled Tree/Limb ³	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
121	CURTIS-11077											
122	CURTIS-CURTIS 13	1	8			1	8	1	8			
123	DAYTON-EAST	9	1,433	1	356	8	1,077	1	93	7	984	
124	DAYTON-LAFAYETTE	5	2,456			5	2,456	2	15	3	2,441	
125	DAYTON-SOUTHWEST	4	318			4	318	1	209	3	109	
126	DELAWARE-DENVER	9	5,326	4	252	5	5,074	3	5,068	2	7	
127	DELAWARE-INTERSTATE	3	902			3	902			3	902	
128	DELAWARE-LOMBARD	4	37	2	32	2	4	1	2	1	2	
129	DENNY-EAST	4	137			4	137	2	92	2	45	
130	DENNY-NORTH											
131	DENNY-SOUTH											
132	DENNY-WEST	1	4			1	4			1	4	
133	DILLEY-DILLEY 13	6	518			6	518	2	271	4	247	
134	DILLEY-SPRINGHILL											
135	DUNNS CORNER-DUNNS CORNER 13	24	2,185	2	7	22	2,178	16	1,142	6	1,036	
136	DUNNS CORNER-KELSO	1	37			1	37	1	37			
137	DURHAM-BONITA											
138	DURHAM-BRIDGEPORT											
139	DURHAM-DURHAM 13											
140	DURHAM-POOPLANT											
141	DURHAM-SATTLER	7	13,063			7	13,063			7	13,063	
142	DURHAM-SOUTH											
143	E-11021											
144	E-11039											
145	E-11040											
146	E-11041											
147	E-11042											
148	E-11043											
149	E-11047											
150	E-11064											
151	E-13139	3	611			3	611	1	518	2	93	
152	E-13140											
153	E-13141											
154	E-13142											
155	E-13144	4	686			4	686	3	595	1	91	
156	E-13145											
157	E-13148											
158	E-13149											
159	E-13150											
160	EAGLE CREEK-BARTON	14	3,648	1	33	13	3,615	11	3,599	2	16	1 24

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2019 Outages by Cause Vegetation

Feeder Name	Total Trees ¹		Total Preventable (Tree/Limb Burning)		Total Non-Preventable ²		Tree Uprooted		Limb on Line		Felled Tree/Limb ³		
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	
161	EAGLE CREEK-RIVER MILL	9	600	2	403	7	197	5	194	2	4	1	2
162	EASTPORT-76TH	2	157			2	157			2	157		
163	EASTPORT-PLAZA												
164	ELMA-ELMA 13												
165	ELMA-FOUR CORNERS												
166	ELMA-HUDSON												
167	ELMA-STATE	1	2			1	2			1	2		
168	ESTACADA-ESTACADA 13	14	4,539	1	31	13	4,508	4	1,822	9	2,687		
169	ESTACADA-FARADAY	20	5,832	1	1,240	19	4,591	6	715	13	3,877	1	14
170	ESTACADA-NORTH FORK	42	7,592	2	1,311	40	6,281	13	3,062	27	3,220		
171	FAIRMOUNT-CANDALARIA	3	264			3	264	2	184	1	80		
172	FAIRMOUNT-MISSION	13	2,936	2	6	11	2,930	8	1,832	3	1,098		
173	FAIRVIEW-CLEAR CREEK												
174	FAIRVIEW-FAIRVIEW 13	1	641			1	641	1	641				
175	FAIRVIEW-KENNEL CLUB												
176	FAIRVIEW-TROUTDALE	3	8			3	8	1	2	2	6		
177	FAIRVIEW-WOOD VILLAGE	1	42			1	42	1	42				
178	FARGO-FARGO 13	13	2,157	4	599	9	1,558	4	1,492	5	66		
179	GALES CREEK-GALES CREEK 13	28	6,623	1	4	27	6,619	15	3,139	12	3,480		
180	GARDEN HOME-MCKAY	5	6,476	1	107	4	6,369	1	6,345	3	24		
181	GARDEN HOME-METZGER	7	10,179	1	136	6	10,043	1	3	5	10,040		
182	GLENCOE-GLISAN	3	13,007	1	6,602	2	6,404	2	6,404				
183	GLENCOE-PROVIDENCE	1	5			1	5			1	5		
184	GLENCOE-SUNNYSIDE	2	117			2	117			2	117		
185	GLENCULLEN-BRIDLEMILE	10	3,213			10	3,213	7	922	3	2,291		
186	GLENCULLEN-SUNSET	4	168			4	168	2	164	2	4		
187	GLENDOVEER-13596	3	80	1	1	2	79			2	79		
188	GLENDOVEER-13597	2	134			2	134			2	134		
189	GLENDOVEER-13598	1	1			1	1			1	1		
190	GLENDOVEER-13599	1	43			1	43			1	43		
191	GLENDOVEER-CLIFFGATE	1	2			1	2			1	2		
192	GLENDOVEER-NORTHEAST	1	6			1	6			1	6		
193	GLISAN-FAB 2A												
194	GLISAN-UTILITY 1B												
195	GORMLEY-MCMINNVILLE WL												
196	GRAND RONDE-AGENCY	3	2,020			3	2,020	2	1,760	1	260		
197	GRAND RONDE-FORTHILL	7	1,948			7	1,948	6	1,946	1	2		
198	HARBORTON-BURLINGTON	39	5,612	2	321	37	5,291	16	4,483	21	808		
199	HARBORTON-LINNTON	7	805	1	717	6	88	3	26	3	62		
200	HARMONY-HARMONY 13												

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Feeder Name	Total Trees ¹		Total Preventable (Tree/Limb Burning)		Total Non-Preventable ²		Tree Uprooted		Limb on Line		Felled Tree/Limb ³	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
201 HARMONY-INTERNATIONAL	2	286	1	271	1	15			1	15		
202 HARMONY-LAKE												
203 HARMONY-LINWOOD												
204 HARMONY-MILWAUKIE	7	1,254	1	23	6	1,231	2	53	4	1,178		
205 HARMONY-THIESSEN												
206 HARRISON-DAVIS	3	245	1	2	2	243	1	238	1	5		
207 HARRISON-HARRISON 13	3	3			3	3			3	3		
208 HARRISON-IVON	1	60			1	60			1	60		
209 HAYDEN ISLAND-MAINLAND	2	328			2	328	1	142	1	187		
210 HAYDEN ISLAND-NORTH SHORE	4	16,214	1	2	3	16,212	1	16,200	2	12		
211 HAYDEN ISLAND-SOUTH SHORE	8	1,839			8	1,839	4	33	4	1,807		
212 HEMLOCK-FREMONT												
213 HEMLOCK-HEMLOCK 13												
214 HEMLOCK-MASON												
215 HILLCREST-CASCADIA												
216 HILLCREST-HILLCREST 13												
217 HILLCREST-SOUTH												
218 HILLSBORO-DAIRY CREEK	6	6,882			6	6,882	2	6,650	4	232		
219 HILLSBORO-DENNIS												
220 HILLSBORO-JACKSON	2	10			2	10			2	10		
221 HILLSBORO-LAUREL	8	235			8	235	4	34	4	200		
222 HILLSBORO-SCHOLLS												
223 HOGAN NORTH-BRIGADOON												
224 HOGAN NORTH-HOGAN NORTH 13	9	262	1	173	8	90	3	40	5	49		
225 HOGAN NORTH-LINKS	7	2,381			7	2,381	5	2,352	2	29		
226 HOGAN NORTH-SALQUIST	7	139			7	139			7	139		
227 HOGAN SOUTH-CLEVELAND	1	232			1	232			1	232		
228 HOGAN SOUTH-LAWRENCE	3	4,821			3	4,821	3	4,821				
229 HOGAN SOUTH-MAIN	1	1			1	1			1	1		
230 HOGAN SOUTH-PAROPA												
231 HOGAN SOUTH-WALLULA												
232 HOLGATE-BYBEE	3	5			3	5			3	5		
233 HOLGATE-GIDEON	1	2			1	2	1	2				
234 HOLGATE-HOLGATE 13	4	233	2	61	2	171			2	171		
235 HOLGATE-KENILWORTH	2	13			2	13			2	13		
236 HOLGATE-RHONE												
237 HUBER-BANY												
238 HUBER-FARMINGTON	2	1,299			2	1,299			2	1,299		
239 HUBER-HUBER 13	2	620	1	29	1	591			1	591		
240 HUBER-KINNAMAN	2	6,799			2	6,799	1	7	1	6,792	1	174

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	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
241	HUBER-MARYVILLE											
242	INDIAN-KEIZER	3	156			3	156			3	156	
243	INDIAN-LABISH	3	310	1	305	2	4			2	4	
244	INDIAN-NORTH	3	1,978			3	1,978			3	1,978	
245	INDIAN-STATION											
246	INDIAN-WEST	1	211			1	211			1	211	
247	ISLAND-13180	1	14			1	14	1	14			
248	ISLAND-13187	7	2,976			7	2,976	2	2,734	5	242	
249	ISLAND-13188	2	10	1	8	1	2			1	2	
250	ISLAND-ISLAND 13											
251	JENNINGS LODGE-ADDIE	1	22			1	22			1	22	
252	JENNINGS LODGE-JENNINGS 13	3	30	1	25	2	4			2	4	
253	JENNINGS LODGE-MELDRUM											
254	JENNINGS LODGE-OAK GROVE	5	294			5	294	2	129	3	165	
255	JENNINGS LODGE-WEBSTER	1	274	1	274							
256	KELLEY POINT-KELLEY POINT 13											
257	KELLEY POINT-LEDBETTER											
258	KELLEY POINT-MARINE											
259	KELLEY POINT-SIMMONS											
260	KELLY BUTTE-BINNSMEAD	2	3	2	3							
261	KELLY BUTTE-FAIRLAWN											
262	KELLY BUTTE-MALL 205	4	16	1	2	3	15			3	15	
263	KELLY BUTTE-MCGREW	3	19			3	19	1	12	2	8	
264	KING CITY-BULL MOUNTAIN											
265	KING CITY-FISCHER	1	26			1	26			1	26	
266	KING CITY-HAZELBROOK											
267	KING CITY-NORTH	2	815	1	283	1	531			1	531	
268	KING CITY-SUMMERFIELD											
269	LAKE LABISH-LAKE LABISH											
270	LELAND-BEAVERCREEK	13	5,293	3	131	10	5,163	6	5,152	4	11	
271	LELAND-CARUS	33	26,974	2	7	31	26,967	13	13,706	18	13,262	1 3
272	LELAND-KELM	1	55			1	55			1	55	
273	LENTS-13101	2	6			2	6			2	6	
274	LENTS-HAPPY VALLEY	5	5,988	1	4	4	5,984	1	2	3	5,981	
275	LENTS-MT SCOTT	1	620			1	620			1	620	
276	LENTS-NORTH	1	2	1	2							
277	LIBERAL-LIBERAL 13	15	8,176	1	663	14	7,513	8	3,820	6	3,693	
278	LIBERAL-SAWMILL											
279	LIBERTY-BROWNING	1	188			1	188	1	188			
280	LIBERTY-LONE OAK											

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	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	
281	LIBERTY-MORNINGSIDE	1	6			1	6			1	6		
282	LIBERTY-ROSEDALE	8	230	1	11	7	218	5	215	2	4	1	65
283	LIBERTY-SKYLINE	2	680	1	576	1	104	1	104			1	10
284	LIBERTY-VISTA												
285	MAIN-AIRPORT	1	2			1	2			1	2		
286	MAIN-BENTLEY	1	13			1	13			1	13		
287	MAIN-EXPRESS	5	1,597			5	1,597			5	1,597		
288	MAIN-GRIFFIN OAKS												
289	MAIN-JONES FARM												
290	MAIN-RIVER												
291	MARKET-ENGLEWOOD	3	3,686	1	31	2	3,655	1	3,654	1	1		
292	MARKET-FAIRGROUNDS	1	5			1	5			1	5		
293	MARKET-HAWTHORNE												
294	MARKET-PARK	2	803			2	803			2	803		
295	MARQUAM-ORANGE												
296	MARQUAM-TILIKUM												
297	MAXIM-MAXIM 13												
298	MCCLAIN-COTTAGE	1	1			1	1			1	1		
299	MCCLAIN-FRONT	2	261			2	261			2	261		
300	MCCLAIN-HOLLYWOOD	2	12	1	4	1	8			1	8		
301	MCGILL-HORSETAIL	1	2			1	2	1	2				
302	MCGILL-LATOURELL												
303	MERIDIAN-65TH												
304	MERIDIAN-BORLAND	2	1,747			2	1,747			2	1,747		
305	MERIDIAN-CHILDS												
306	MERIDIAN-LAKEVIEW	2	7			2	7	1	5	1	2		
307	MERIDIAN-MERIDIAN 13	7	595			7	595	2	282	5	313		
308	MERIDIAN-NYBERG												
309	MERIDIAN-PILKINGTON	3	5,441	2	1,200	1	4,241			1	4,241		
310	MERIDIAN-SAGERT												
311	MIDDLE GROVE-BROWN	2	17	1	4	1	13			1	13		
312	MIDDLE GROVE-CHEMEKETA												
313	MIDDLE GROVE-CORDON	2	1,300	1	21	1	1,279			1	1,279		
314	MIDDLE GROVE-SWEGLE												
315	MIDDLE GROVE-WEST												
316	MIDWAY-DIVISION	1	10			1	10			1	10		
317	MIDWAY-DOUGLAS	3	103	2	100	1	3	1	3				
318	MIDWAY-LYNCH	1	5			1	5			1	5		
319	MIDWAY-POWELLHURST	3	150			3	150	1	148	2	3		
320	MILL CREEK-EASTLAND	3	58	1	2	2	56	1	54	1	2		

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Feeder Name	Total Trees ¹		Total Preventable (Tree/Limb Burning)		Total Non-Preventable ²		Tree Uprooted		Limb on Line		Felled Tree/Limb ³		
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	
321	MILL CREEK-KUEBLER												
322	MILL CREEK-MILL CREEK 13												
323	MOLALLA-BUCKAROO										2	93	
324	MOLALLA-FOREST	7	167	1	1	6	166	3	85	3	80		
325	MOLALLA-MARQUAM	23	5,279	9	2,678	14	2,601	11	2,265	3	336	1	18
326	MOLALLA-YODER	2	1,730	1	56	1	1,674			1	1,674		
327	MT ANGEL-EAST	1	1			1	1			1	1		
328	MT ANGEL-WEST	5	244	1	2	4	242	2	18	2	224		
329	MT PLEASANT-CLAIRMONT	3	6	1	3	2	3			2	3		
330	MT PLEASANT-MT VIEW	2	20			2	20			2	20		
331	MT PLEASANT-RIVERCREST	1	55			1	55	1	55				
332	MT PLEASANT-SOUTH END	2	600	1	203	1	397	1	397				
333	MULINO-NORTH	7	109			7	109	2	45	5	64		
334	MULINO-SOUTH	8	452	1	6	7	446	4	176	3	270		
335	MULTNOMAH-13176	4	12			4	12	1	1	3	11		
336	MULTNOMAH-13177	12	2,236	1	41	11	2,195	4	1,934	7	261	1	277
337	MULTNOMAH-13181	5	145	1	0	4	144	3	143	1	1		
338	MULTNOMAH-MULTNOMAH 13	8	1,436	1	1	7	1,435			7	1,435		
339	MURRAYHILL-KINTON												
340	MURRAYHILL-MURRAYHILL 13												
341	MURRAYHILL-REUSSER	2	15	2	15								
342	MURRAYHILL-TEAL	2	63	1	61	1	2			1	2		
343	NEWBERG-CHEHALEM	9	1,800			9	1,800	4	580	5	1,220	1	8
344	NEWBERG-DUNDEE	7	5,515			7	5,515	1	1	6	5,514		
345	NEWBERG-HOOVER PARK	1	1			1	1			1	1		
346	NEWBERG-NORTH COLLEGE												
347	NORTH MARION-CROSBY	4	2,491			4	2,491	1	2	3	2,489		
348	NORTH MARION-FRONT												
349	NORTH MARION-HUBBARD	5	3,183	2	2,019	3	1,164	1	8	2	1,156		
350	NORTH MARION-MCLAREN	3	83			3	83	1	5	2	78		
351	NORTH PLAINS-MASON HILL	15	4,476	3	333	12	4,144	9	3,026	3	1,118	1	161
352	NORTH PLAINS-NORTH PLAINS 13	14	2,261	2	152	12	2,109	8	2,084	4	25		
353	NORTHERN-11009												
354	NORTHERN-11016	1	3			1	3			1	3		
355	NORTHERN-11071												
356	OAK GROVE-LAKE HARRIET	3	741			3	741	1	12	2	728		
357	OAK GROVE-WHITE WATER	1	10			1	10	1	10				
358	OAK HILLS-FIVE OAKS												
359	OAK HILLS-GREENBRIER												
360	OAK HILLS-OAK HILLS 13												

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Feeder Name	Total Trees ¹		Total Preventable (Tree/Limb Burning)		Total Non-Preventable ²		Tree Uprooted		Limb on Line		Felled Tree/Limb ³	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
361	OAK HILLS-SOMERSET											
362	OAK HILLS-WALKER											
363	OREGON STEEL-OREGON STEEL 13											
364	ORENCO-231ST											
365	ORENCO-AMBERGLEN											
366	ORENCO-BASELINE											
367	ORENCO-ORENCO 13											
368	ORENCO-PRIMATE											
369	ORENCO-WILKINS											
370	ORIENT-BARLOW	2	6			2	6	1	2	1	4	
371	ORIENT-ORIENT 13	12	1,081			12	1,081	4	156	8	924	
372	ORIENT-OXBOW	23	2,560			23	2,560	11	796	12	1,764	
373	OSWEGO-IRON MOUNTAIN	4	837	3	836	1	1			1	1	
374	OSWEGO-MARYLHURST	3	5,107	1	7	2	5,100	1	5,093	1	7	
375	OSWEGO-PALATINE	17	4,167			17	4,167	5	2,794	12	1,373	
376	OSWEGO-STAFFORD											
377	OXFORD-FAIRVIEW	1	0			1	0			1	0	
378	OXFORD-LEE											
379	OXFORD-MADRONA											
380	OXFORD-OXFORD 13	2	67			2	67			2	67	
381	OXFORD-RURAL											
382	OXFORD-SHELTON	1	484			1	484			1	484	1 5
383	PELTON-ROUND BUTTE											
384	PENINSULA PARK-OCKLEY GREEN	4	12,869	1	5	3	12,864			3	12,864	
385	PENINSULA PARK-PENINSULA PARK	2	8			2	8	2	8			
386	PLEASANT VALLEY-BAXTER	4	3,206	1	17	3	3,189	2	3,178	1	11	
387	PLEASANT VALLEY-CLATSOP	1	337			1	337	1	337			
388	PLEASANT VALLEY-MOON	2	4			2	4	1	3	1	2	
389	PLEASANT VALLEY-PLEASANT 13	10	3,609			10	3,609	6	1,977	4	1,632	
390	PLEASANT VALLEY-SUN	7	2,347	1	20	6	2,326	2	44	4	2,282	
391	PORTLAND WATER-PUMPING											
392	PORTSMOUTH-CARBIDE	4	415	1	19	3	396			3	396	
393	PORTSMOUTH-DISPOSAL											
394	PORTSMOUTH-WILLIS											
395	PROGRESS-GREENBURG	1	3			1	3			1	3	
396	PROGRESS-HALL											
397	PROGRESS-ROBINSON											
398	PROGRESS-SAWYER											
399	PROGRESS-WASHINGTON SQ #1											
400	PROGRESS-WASHINGTON SQ #2											

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Outs = Outages

Hrs = # of customers * duration hrs

2019 Outages by Cause Vegetation

Feeder Name	Total Trees ¹		Total Preventable (Tree/Limb Burning)		Total Non-Preventable ²		Tree Uprooted		Limb on Line		Felled Tree/Limb ³	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
401 RALEIGH HILLS-DOGWOOD	10	1,058	1	349	9	709	1	107	8	601		
402 RALEIGH HILLS-MONTCLAIR	6	1,544	3	91	3	1,453	2	1,373	1	80		
403 RALEIGH HILLS-OLESON	7	1,374	1	11	6	1,363	3	600	3	763		
404 RAMAPO-EMERALD	1	231			1	231			1	231		
405 RAMAPO-GILBERT	4	84	1	64	3	20	1	12	2	8		
406 RAMAPO-RAMAPO 13	4	1,733	1	1,727	3	6	2	3	1	3		
407 REDLAND-HENRICI	26	10,361	4	2,982	22	7,379	7	1,814	15	5,565		
408 REDLAND-REDLAND 13	12	3,304	1	201	11	3,104	6	2,729	5	374		
409 REEDVILLE-AUGUSTA	1	8			1	8	1	8				
410 REEDVILLE-BLANTON	4	1,832	1	188	3	1,644			3	1,644		
411 REEDVILLE-HAZELDALE	8	4,759	3	4,676	5	83	1	5	4	78		
412 REEDVILLE-INTEL #5												
413 REEDVILLE-TV	1	5			1	5	1	5				
414 RIVERGATE SOUTH-11010												
415 RIVERGATE SOUTH-11011												
416 RIVERGATE SOUTH-PEARCY												
417 RIVERGATE SOUTH-SWIFT												
418 RIVERVIEW-FULTON	7	394	1	14	6	381	1	61	5	320		
419 RIVERVIEW-MACADAM	1	39			1	39			1	39		
420 RIVERVIEW-TERWILLIGER	5	599	2	83	3	516	2	514	1	1		
421 ROCKWOOD-AIRPORT												
422 ROCKWOOD-BOEING												
423 ROCKWOOD-INDUSTRIAL												
424 ROCKWOOD-REYNOLDS	2	64	1	62	1	2			1	2		
425 ROCKWOOD-ROCKWOOD 13												
426 ROCKWOOD-WILKES												
427 ROSEMONT-HIDDEN SPRINGS	3	122	1	7	2	115	2	115				
428 ROSEMONT-MOSSY BRAE	2	120			2	120	2	120				
429 ROSEMONT-OVERLOOK	2	269			2	269	1	176	1	93		
430 ROSEWAY-ALEXANDER												
431 ROSEWAY-ESPLANADE	1	1			1	1			1	1		
432 ROSEWAY-ROSEWAY 13												
433 RUBY-CARLINE	6	437	1	2	5	434	4	432	1	2		
434 RUBY-JUNCTION	1	224			1	224			1	224		
435 SALEM-13260												
436 SALEM-13261												
437 SALEM-13262												
438 SALEM-13263												
439 SALEM-13264												
440 SALEM-UNION												

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2019 Outages by Cause Vegetation

Feeder Name	Total Trees ¹		Total Preventable (Tree/Limb Burning)		Total Non-Preventable ²		Tree Uprooted		Limb on Line		Felled Tree/Limb ³	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
441 SANDY-362ND	21	12,095	2	2,212	19	9,884	11	7,890	8	1,993		
442 SANDY-BLUFF	7	1,689	1	10	6	1,680	3	256	3	1,424		
443 SANDY-SANDY 13	43	6,631	5	1,561	38	5,070	14	1,998	24	3,072	1	164
444 SANDY-WILDCAT	16	2,745	2	1,126	14	1,618	3	157	11	1,461		
445 SCAPPOOSE-SAUVIE ISLAND												
446 SCHOLLS FERRY-KEMMER	2	4,125	1	4,124	1	1			1	1		
447 SCHOLLS FERRY-RAINBOW	20	5,472	3	4,509	17	963	8	290	9	673		
448 SCHOLLS FERRY-ROY ROGERS	1	1			1	1			1	1		
449 SCOGGINS-CHERRY GROVE	10	890			10	890	5	811	5	78		
450 SCOGGINS-LAURELWOOD	11	591			11	591	7	420	4	171		
451 SCOTTS MILLS-SCOTTS MILLS 13	33	3,675	2	138	31	3,537	15	3,187	16	351		
452 SELLWOOD-KELLOGG PARK	1	146	1	146								
453 SELLWOOD-SELLWOOD 13	1	11	1	11								
454 SELLWOOD-WAVERLY	4	2,083	1	16	3	2,067			3	2,067		
455 SHERIDAN-EAST	9	203	2	6	7	197	2	122	5	75		
456 SHERIDAN-KADELL	5	1,394	1	1,002	4	392	4	392				
457 SHUTE-LINDE 1 35KV												
458 SHUTE-RONLER 1												
459 SHUTE-RONLER 2												
460 SILVERTON-NORTH	5	32	1	2	4	30	1	21	3	9		
461 SILVERTON-SOUTH	22	2,205	5	243	17	1,962	3	101	14	1,861		
462 SILVERTON-WEST	4	71			4	71			4	71		
463 SIX CORNERS-13359	3	340			3	340	3	340				
464 SIX CORNERS-13360	3	274			3	274			3	274		
465 SIX CORNERS-BORCHERS	6	2,752			6	2,752	3	2,175	3	577		
466 SIX CORNERS-CHAPMAN	3	42			3	42	1	8	2	34		
467 SIX CORNERS-SIX CORNERS 13	1	9			1	9			1	9		
468 SP NEWSPRINT-NEWBERG												
469 SPRING HILL-SPRING HILL												
470 SPRINGBROOK-FERNWOOD	3	335			3	335			3	335		
471 SPRINGBROOK-ST PAUL	7	53	1	2	6	51	3	22	3	28		
472 SPRINGBROOK-VILLA												
473 SPRINGBROOK-ZIMRI	2	22			2	22			2	22		
474 ST HELENS-KASTER												
475 ST LOUIS-EAST												
476 ST LOUIS-NORTH	5	2,985	2	1,429	3	1,556	1	1,428	2	128		
477 ST LOUIS-WEST											1	34
478 ST MARYS EAST-BETHANY												
479 ST MARYS EAST-ELMONICA												
480 ST MARYS EAST-JENKINS												

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2019 Outages by Cause Vegetation

Feeder Name	Total Trees ¹		Total Preventable (Tree/Limb Burning)		Total Non-Preventable ²		Tree Uprooted		Limb on Line		Felled Tree/Limb ³	
	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
481	ST MARYS EAST-MILLIKAN											
482	ST MARYS EAST-ST MARYS 13											
483	STEPHENS-11001											
484	STEPHENS-11020	1	2			1	2			1	2	
485	STEPHENS-11054 NETWORK											
486	STEPHENS-11055 NETWORK											
487	STEPHENS-11092 NETWORK											
488	STEPHENS-11093 NETWORK											
489	STEPHENS-11094 NETWORK											
490	STEPHENS-11095 NETWORK											
491	STEPHENS-11097 NETWORK											
492	STEPHENS-11098											
493	STEPHENS-11099 NETWORK											
494	STIMSON LUMBER-FORESTEX											
495	SULLIVAN-ROBINWOOD	6	566	1	170	5	396	3	343	2	53	
496	SULLIVAN-SALAMO	1	140			1	140	1	140			
497	SULLIVAN-SUSSEX	1	2	1	2							
498	SULLIVAN-TANNER											
499	SULLIVAN-WILLAMETTE	3	253			3	253	2	250	1	3	
500	SULZER PUMPS-115B											
501	SUMMIT-GOVERNMENT CAMP											
502	SUMMIT-MEADOWS											
503	SUMMIT-SUMMIT 13											
504	SUNSET-BLANCHET											
505	SUNSET-COLFAX											
506	SUNSET-CORNELL											
507	SUNSET-DORION											
508	SUNSET-IDTB											
509	SUNSET-IDTC											
510	SUNSET-INTEL D1B1											
511	SUNSET-INTEL D1X1											
512	SUNSET-KOMATSU #1											
513	SUNSET-LANE											
514	SUNSET-MCCALL											
515	SUNSET-MEEK											
516	SUNSET-NIXON											
517	SUNSET-PAULING											
518	SUNSET-SPALDING											
519	SUNSET-WHITMAN											
520	SUNSET-YOUNG											

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	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
521	SWAN ISLAND-BASIN											
522	SWAN ISLAND-DOLPHIN											
523	SWAN ISLAND-FREIGHTLINER											
524	SWAN ISLAND-GOING											
525	SWAN ISLAND-SHIPYARD											
526	SYLVAN-BARNES	18	3,654			18	3,654	7	3,197	11	457	
527	SYLVAN-PATTON	16	2,059	1	23	15	2,036	4	22	11	2,015	
528	TABOR-82ND	1	129			1	129			1	129	
529	TABOR-HOSPITAL											
530	TABOR-TABOR 13	2	11	2	11							
531	TEKTRONIX-DUCKS											
532	TEKTRONIX-HOCKEN											
533	TEKTRONIX-MEADOW	7	1,003			7	1,003	2	23	5	980	
534	TEKTRONIX-NORTH											
535	TEKTRONIX-SHANNON	5	1,761	1	550	4	1,211	4	1,211			
536	TEKTRONIX-SOUTH	5	330			5	330	4	329	1	1	
537	TEKTRONIX-TEKTRONIX 13											
538	TEKTRONIX-TERMAN											
539	TEKTRONIX-WEST											
540	TEMP B-NORTH											
541	TEMP B-SOUTH											
542	TIGARD-13336											
543	TIGARD-13337	1	3			1	3			1	3	
544	TIGARD-13361	3	1,097			3	1,097	2	1,044	1	53	
545	TIGARD-13362											
546	TIGARD-TIGARD 13	1	239			1	239			1	239	
547	TOWN CENTER-LAWNFIELD											
548	TOWN CENTER-MONTEREY											
549	TOWN CENTER-NORTH											
550	TOWN CENTER-PRECISION CASTPARTS											
551	TOWN CENTER-SOUTH											
552	TOWN CENTER-SUNNYBROOK											
553	TOWN CENTER-VALLEY VIEW											
554	TROJAN-EAST											
555	TUALATIN-AVERY											
556	TUALATIN-CIPOLE	1	1			1	1			1	1	
557	TUALATIN-HERMAN	1	6	1	6							
558	TUALATIN-IBACH	6	2,800			6	2,800	3	696	3	2,104	1 9
559	TUALATIN-LEVETON											
560	TUALATIN-TUALATIN 13											

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	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
561 TURNER-CASCADE	5	531	3	310	2	221			2	221		
562 TURNER-TURNER 13	7	74			7	74	2	55	5	19		
563 TWILIGHT-BREMER	15	1,352	2	340	13	1,012	7	368	6	644		
564 UNIONVALE-UNIONVALE 13	8	285	2	7	6	278	1	111	5	167		
565 UNIVERSITY-MILL	2	8			2	8	1	6	1	2		
566 UNIVERSITY-TRADE	6	13,784			6	13,784	5	13,783	1	2		
567 URBAN-BARBUR	1	594			1	594	1	594				
568 URBAN-CAMPUS												
569 URBAN-CORBETT	2	2,434			2	2,434	1	2,189	1	245		
570 URBAN-GAINES	2	37	1	13	1	24			1	24		
571 URBAN-GIBBS												
572 URBAN-KELLY	2	6			2	6			2	6		
573 URBAN-LANDING												
574 URBAN-MEDICAL												
575 URBAN-OHSU												
576 WACKER-WACKER 1												
577 WACONDA-NORPAC												
578 WACONDA-RIVER	5	445	1	7	4	438	2	433	2	6		
579 WACONDA-WACONDA 13	2	29			2	29	1	26	1	3		
580 WALLACE-WALLACE 13	10	82	2	11	8	71	2	16	6	55		
581 WALLACE-WILLOW LAKE												
582 WELCHES-WELCHES 13	21	7,366	1	10	20	7,356	11	444	9	6,911		
583 WELCHES-ZIG ZAG	46	8,565	1	6	45	8,559	28	6,229	17	2,330		
584 WEST PORTLAND-72ND	1	122			1	122			1	122		
585 WEST PORTLAND-NORTH	2	10			2	10			2	10		
586 WEST PORTLAND-PACIFIC	5	4,054	3	3,337	2	717	2	717				
587 WEST PORTLAND-WEST PORTLAND 13	4	5,931	1	321	3	5,610	1	5,521	2	90		
588 WEST UNION-ALOCLEK												
589 WEST UNION-CORNELIUS PASS	20	4,792	1	254	19	4,538	4	886	15	3,652		
590 WEST UNION-JACOBSON												
591 WEST UNION-WEST UNION 13												
592 WILLAMINA-BRIDGE	8	78	1	26	7	52	2	29	5	23		
593 WILLAMINA-BUELL	13	912	1	7	12	905	7	675	5	229		
594 WILLAMINA-LUMBER												
595 WILLBRIDGE-WILLBRIDGE #1												
596 WILLBRIDGE-WILLBRIDGE #4												
597 WILSONVILLE-BOECKMAN												
598 WILSONVILLE-CHARBONNEAU	2	78			2	78			2	78		
599 WILSONVILLE-CITY	2	190			2	190	1	8	1	183		
600 WILSONVILLE-MENTORTEK												

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	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs	Outs	Hrs
601 WILSONVILLE-PARKWAY												
602 WILSONVILLE-VILLEBOIS	1	231			1	231			1	231		
603 WILSONVILLE-WEST	7	7,674			7	7,674	3	4,728	4	2,946		
604 WOODBURN-CANNERY												
605 WOODBURN-EAST	3	90	1	54	2	36			2	36		
606 WOODBURN-TOMLIN	1	2			1	2			1	2		
607 WOODBURN-WEST	2	5,909	1	15	1	5,894			1	5,894		
608 YAMHILL-CARLTON	14	1,378	1	8	13	1,371	4	350	9	1,021		
609 YAMHILL-YAMHILL 13	6	1,011			6	1,011	1	210	5	802		
Grand Totals:	1,928	555,814	229	62,983	1,699	492,830	703	252,939	996	239,891	27	2,882

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Section VIII

2019 Feeder Information

The Feeder Information list consists of the following categories for each feeder:

- Code
- Name
- Region
- Number of Customers
- Class

NOTE:

- This list INCLUDES idle and alternate feeder services.

Attachment A
PGE 2019 Annual Reliability Report

Confidential - provided in a password protected zip file
Section III, Feeder Performance Summary
Section VIII, 2019 Feeder Information

Section IX

Appendix

- Reliability Measure Definitions
- IEEE 1366 TMED Definition and Classification
- Cause Code Categories and Mapping
- PGE Service Territory Map

Reliability Measure Definitions

1. Reliability The degree to which electric service is supplied without interruptions.

2. SAIDI The system average interruption duration index. This is the sustained interruption duration time (in minutes) that an average customer experiences during the year. It is determined by dividing the annual sum of all customer sustained interruption durations by the total number of customers served.

$$\text{SAIDI} = \frac{\text{Sum of customer sustained interruption durations}}{\text{Total number of PGE customers served}}$$

3. SAIFI The system average sustained interruption frequency index. This index is the number of times that an average customer experiences a sustained interruption during a year. It is determined by dividing the total annual number of customer sustained interruptions by the total number of customers served

$$\text{SAIFI} = \frac{\text{Total number of customer sustained interruptions}}{\text{Total number of PGE customers served}}$$

4. MAIFI_e Momentary average interruption frequency index of events for the system. This index is the number of times that an average customer experiences momentary interruption events during a year. It is determined by dividing the total annual number of customer momentary interruption events by the total number of customers served. Note that this index does not include the events immediately preceding a sustained interruption.

$$\text{MAIFI}_e = \frac{\text{Total number of customer momentary interruption events}}{\text{Total number of PGE customers served on Feeders with MV90 or SCADA}}$$

Major Event Day (MED) Definition and Classification¹

A MED is a day in which the daily system SAIDI exceeds a threshold value, TMED. The SAIDI index is used as the basis of this definition since it leads to consistent results regardless of utility size, and because SAIDI is a good indicator of operational and design stress. Even though SAIDI is used to determine the MEDs, all indices should be calculated based on removal of the identified days.

In calculating daily system SAIDI, any interruption that spans multiple days is accrued to the day on which the interruption begins. The MED identification TMED value is calculated at the end of each reporting period (typically one year) for use during the next reporting period, as follows:

- a) Collect values of daily SAIDI for five sequential years, ending on the last day of the last complete reporting period. If fewer than five years of historical data are available, use all available historical data until five years of historical data are available.
- b) Only those days that have a SAIDI/Day value will be used to calculate TMED (do not include days that did not have any interruptions).
- c) Take the natural logarithm (ln) of each daily SAIDI value in the dataset.
- d) Find α (Alpha), the average of the logarithms (also known as the log-average) of the data set.
- e) Find β (Beta), the standard deviation of the logarithms (also known as the log-standard deviation) of the data set.
- f) Compute the MED threshold, TMED, using:

$$T_{MED} = e^{(\alpha + 2.5\beta)}$$

- g) Any day with daily SAIDI greater than the threshold value TMED that occurs during the subsequent reporting period is classified as a MED.

Activities that occur on days classified as MEDs should be separately analyzed and reported.

¹ Per IEEE Standard 1366-2012: IEEE Guide for Electric Power Distribution Reliability Indices

Cause Code Categories and Mapping

Due to implementation of a new OMS system, a more detailed list of cause codes have been created and mapped to performance categories

Cause Code Category Mapping - Natural		Cause Code Category Mapping - System			
Category	Cause	Category	Cause	Category	Cause
Adverse Weather	Earthquake	Cutout, Fuse, Arrestor	Arrestor	PGE Equipment	Primary Splice
Adverse Weather	Flooding	Cutout, Fuse, Arrestor	Fuse / Cutout	PGE Equipment	Recloser / Sectionalizer
Adverse Weather	Forest Fire	Human Factor	Design Error	PGE Equipment	Regulator
Adverse Weather	High Winds	Human Factor	Installation Error - Improper Install	PGE Equipment	Secondary Cable
Adverse Weather	Severe Heat	Human Factor	Installation Error - Wrong Equipment	PGE Equipment	Secondary Conductor
Adverse Weather	Snow / Ice	Human Factor	Operational Error	PGE Equipment	Secondary Deadend
Animal	Other - Animal	Human Factor	Utility Made Contact	PGE Equipment	Secondary Splice
Animal	Reportable Bird	PGE Equipment	Anchor / Guying	PGE Equipment	Sleeve
Animal	Squirrel	PGE Equipment	Arrestor	PGE Equipment	Stress Cone
Lightning	Lightning	PGE Equipment	Capacitor	PGE Equipment	Submersible Transformer
Unknown	Other - Environment / Weather	PGE Equipment	Cross Arm	PGE Equipment	Switch
Unknown	Pole Fire	PGE Equipment	Elbow	PGE Equipment	UG Connector / Clamp / Jumper
Non-Preventable Tree	Limb on Line	PGE Equipment	Fuse / Cutout	Public	Car Hit Equipment
Non-Preventable Tree	Tree Uprooted	PGE Equipment	Insulator	Public	Electrical Contact
Preventable Tree	Tree / Limb Burning	PGE Equipment	Lateral	Public	Felled Tree / Limb
		PGE Equipment	Meter	Public	Non Residential Fire
		PGE Equipment	Network Protector	Public	Object Contact
		PGE Equipment	OH Connector / Clamp / Jumper	Public	Other - PGE Intentional Outage
		PGE Equipment	Other - Pole Hardware Failure	Public	Other - Public
		PGE Equipment	Other - Underground Hardware Failure	Public	Residential Fire
		PGE Equipment	Overhead Transformer	Public	Underground Dig In
		PGE Equipment	Padmount Transformer	Public	Unplanned - Safety
		PGE Equipment	Pole / Structure	Public	Vandalism / Theft
		PGE Equipment	Primary Cable		
		PGE Equipment	Primary Conductor		

NOTE: Outages where the System is Substation are grouped into Loss of Supply - Substation and outages where the System is Transmission are grouped into Loss of Supply - Transmission

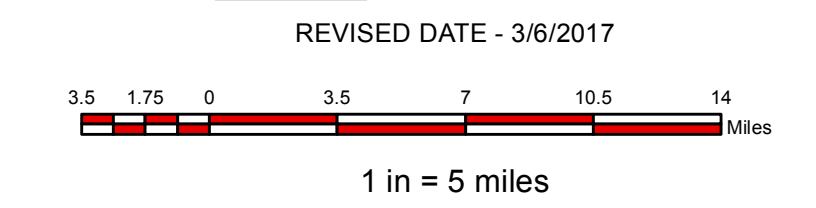
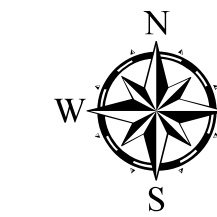
Cause Code Categories and Mapping

Cause Code Category Mapping - Equipment			
Category	Cause	Category	Cause
Cutout, Fuse, Arrestor	Arrestor	Pole	Pole / Structure
Cutout, Fuse, Arrestor	Fuse / Cutout	Substation	Other - Substation Equipment Failure
Meter	Meter	Substation	Protection System
OH Conductor	Primary Conductor	Substation	Terminal Equipment
OH Conductor	Secondary Conductor	Transformer	Overhead Transformer
OH Conductor	Secondary Deadend	Transformer	Padmount Transformer
OH Conductor	Sleeve	Transformer	Submersible Transformer
Primary Device	Capacitor	UG Accessory	Elbow
Primary Device	Network Protector	UG Accessory	Lateral
Primary Device	Recloser / Sectionalizer	UG Accessory	Other - Underground Hardware Failure
Primary Device	Regulator	UG Accessory	Primary Splice
Primary Device	Switch	UG Accessory	Secondary Splice
OH Hardware	Anchor / Guying	UG Accessory	Stress Cone
OH Hardware	Cross Arm	UG Accessory	UG Connector / Clamp / Jumper
OH Hardware	Insulator	UG Conductor	Primary Cable
OH Hardware	OH Connector / Clamp / Jumper	UG Conductor	Secondary Cable
OH Hardware	Other - Pole Hardware Failure		

Cause Code Category Mapping - Tree	
Category	Cause
Non-Preventable Tree	Limb on Line
Non-Preventable Tree	Tree Uprooted
Preventable Tree	Tree / Limb Burning

PGE SERVICE TERRITORY

- Non-PGE
- EASTERN
- SOUTHERN
- WESTERN



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